CAA JOURNAL

OFFICE OF AVIATION INFORMATION

Burden and Wright Propose Personal-plane Aid Program

Government aid in the development of a personal airplane of greater utility in order to stimulate this phase of civil aviation in the United States, was proposed at the Personal Plane Conference, April 15, by William A. M. Burden, Assistant Secretary of Commerce, and T. P. Wright, Administrator of Civil Aeronautics.

Speaking to the chief engineers of the companies now manufacturing personal aircraft, Mr. Burden suggested that an industry-government committee be formed to select a list of development projects considered necessary to improve the airplane to the point where it would be purchased and usefully employed by a wider segment of U. S. citizens.

Priority Project List—A committee composed of industry and government representatives would determine the relative importance of projects and propose a priority list. This list would be taken before the Air Coordinating Committee by the CAA for approval with the request that the appropriate member agencies consider it for submission to Congress for the necessary funds.

Although no definite figure of the cost of the program was discussed, Mr. Wright suggested the expenditure of $5,000,000 over a period of three years, to be used in financing contracts to the industry for carrying out various projects. Noting that some projects would fall naturally into the development activities of the Navy, Army or CAA, he proposed that funds for such improvements, if voted, be put into the budget of these agencies.

Three methods of getting such development were discussed: through competitions within the industry for which prize money (in form of government purchase) would be available; through contracts for individual projects let by government agencies; and through purchases by government of aircraft or components on the basis of performance specifications.

To Recommend Idea—The Aircraft Technical Committee of the Aircraft Industries Association, before whom the proposal was made, decided to recommend the idea favorably to the Personal Aircraft Council at its meeting to be held early in June. Following that, if approval is voted by the AIA, of which the Council is a part, the industry-government committee will meet and prepare its idea of the projects to be developed.

In introducing the proposal, Mr. Burden reviewed the situation in the aircraft industry as follows:

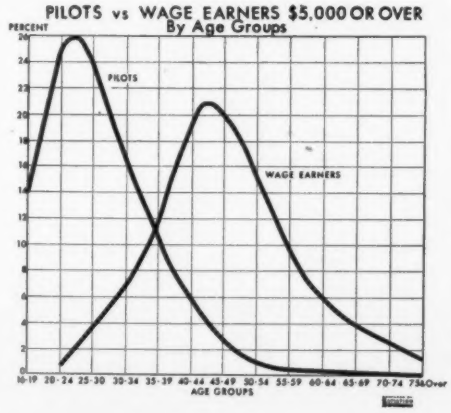
Difficult Task Ahead—"All of you are familiar with the fact that increasing the utility of the personal aircraft (fixed or rotary wing) to the point where it can command a substantial market is going to be a long and difficult task.

"The problem is a complex and difficult one but so was the development of a self-supporting domestic airline system in 1926 when industry and government first tackled that phase of civil aviation seriously. You will remember that at that time air passenger fares were some 20 cents a mile—where such service was available; the accident and regularity rate were both extremely poor; and it would have taken more than an optimist, almost a visionary, to foresee the development which we have today.

"Admittedly the development of fairly widespread personal aircraft use may in some ways be more difficult to accomplish but the hypothetical goals which we have suggested are so very modest in terms of use of other vehicles or national income that they should not be impossible of achievement, given an aggressive and intelligent development program on the part of industry and government.

"The figure of 400,000 civil aircraft (280,000 of the personal type) by 1955 which we have used in our projections is equivalent only to the number of inboard motor boats in service—and they are not very

(See page 54)


PILOTS vs WAGE EARNERS $5,000 OR OVER
By Age Groups
PERCENT
PILOTS
WAGE EARNERS
10-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70-74 75&Over
AGE GROUPS

ICAO Delegates From 42 Nations Meet in Montreal

Delegates from 42 member nations and observers from non-member states were scheduled to participate in the First Assembly Meeting of the International Civil Aviation Organization, which opened in Montreal on May 6.

Questions Before Assembly—Important questions coming before the body include affiliation with the United Nations, possible adoption of a multilateral agreement on commercial rights in international civil air transport, the extent to which ICAO shall participate in joint support of air navigation facilities and services, and general phases of air safety.

The current meeting is the first since ICAO became a permanent body, the word "Provisional" having been dropped from its title in April, after ratification of the Chicago Convention of 1944 by the necessary 26 states.

The work of the Assembly is being carried on by six commissions—General, Technical, Economic, Legal, Administration and Finance, and Joint Support of Air Navigation Services.

U. S. Delegates—The U. S. delegation to the Assembly is headed by Garrison Norton, Assistant Secretary of State, with William A. M. Burden, Assistant Secretary of Commerce, as alternate chairman. Other delegates are James M. Landis, Chairman of the Civil Aeronautics Board; Maj. Gen. Laurence S. Kuter, U. S. Representative to the ICAO Council, which is the executive body of the organization between Assembly meetings; Harllee Branch, Member of the Civil Aeronautics Board; L. Welch Pogue, President of National Aeronautic Association and former chairman of the CAB; and Lt. Comdr. Paul A. Smith of the Coast and Geodetic Survey, U. S. Representative to the ICAO Air Navigation Committee.

Alternate delegates are Russell B. Adams, Director, Economic Bureau, CAB; J. Paul Barringer, Assistant Chief, Aviation Division, State Department; Paul T. David, U. S. Representative on ICAO Air Transport Committee; Livingston T. Merchant, Chief, Aviation Division, State Department; Emory Nunneley, General Counsel, CAB; Carl Schwartz, Estimates Division, Budget Bureau; and Charles I. Stanton, Deputy Administrator, CAA.

(See ICAO Assembly, page 52)

Alaskan Airline Tests Airborne Radar As Aid in Flying Rugged Coastal Route

Airborne radar is at work in Southeastern Alaska in a service test being conducted by Alaska Coastal Airlines and the Civil Aeronautics Administration.

Installed in a Grumman amphibian, a radar set known as APS-10 in war time is being used regularly by pilots of the airline in flying along the rugged coast and into the inlets which are flanked by mountains several thousand feet high.

Screen Shows Landmarks—"That area is wonderful country for radar to prove its usefulness," Don M. Stuart, Director of the CAA Technical Development Service, said in telling of the beginnings of the test. "Water reflects little or no signal to a radar scope, and this makes possible a good 'map' on the screen, since the high mountains and irregular coastline reveal themselves with reasonable clarity. Pilots familiar with landmarks along a given route find the scopes fairly easy to interpret."

Radar scope is installed above instrument panel in amphibian plane operated by Alaska Coastal Airlines, Juneau, Alaska. Transmitting equipment is in cylinder, shown in lower center.

Mr. Stuart, and two officers of Alaska Coastal, Shell B. Simmons and Alec Holden, started the project two years ago. The equipment, manufactured by General Electric, is installed in the nose of the Grumman, protected by a plastic "radome," with the scope and receiver in the cockpit. Since the plane always lands on water, the amphibian gear has been removed, and the 125 pounds of radar equipment do not constitute very much of an added burden.

Installation of the equipment was completed in February by Richard Borden, Radio Engineer from the CAA's Experimental Station in Indianapolis.

"Actually," Mr. Stuart explained, "it is not contemplated, nor would it be economical for the CAA to establish airways for an airline operating as Alaska Coastal does, and yet it deserves flying aids applicable to its special needs just as much as anyone else. By using radar-equipped planes, Alaska Coastal Airlines might have exactly the kind of aids needed, and that is what we are now trying to determine."

Radio Range Impractical—Most of the flights of the airline are short, since it serves Juneau, Sitka, Wrangell and Ketchikan, and various canneries along the shore. Very often, these flights are along inlets and the shore line, at levels below the tops of the mountains nearby, so that navigation by radio range is hardly practicable.

Pilots who have used the radar have been enthusiastic about its possibilities for that area. Clarence Rhode, supervisor of the aircraft operations of the Fish and Wildlife Service for Alaska, wrote that he was surprised how easily he could fly the first time with a radar screen. He flew for 50 miles on instruments at less than 1000 feet in very rugged terrain, and found it easy to follow the coastline. Clarence E. Walters of Alaska Island Airlines, also flying radar for the first time, believes that "a pilot would be quite safe in continuing flight in dense fog or heavy snow with visibility as low as one-eighth of a mile, because he would know his position at all times and would be warned of any obstacles in his path. On instrument flights, with the aid of the automatic direction finder and radar, you would have a combination hard to beat."

The airline and the CAA's Technical Development Service will continue its study of the application of this kind of radar as operational flights are continued.

Aircraft Manufacturers Report $56 Million Output for February

Manufacturers of complete aircraft, during February, had a $56 million month, an increase of six percent over January. Complete aircraft and parts accounted for $52 million, conversion work, $2.2 million, and all other products $1.9 million. Military contracts represented 82 percent, or $42.5 million of the $52-million total output of complete aircraft and parts.

Civil Plane Production—A total of 1914 planes ($7.5 million) was shipped to civil customers, a 12 percent decline in both numbers and value from January's total output (2166 planes and $8.6 million). Shipments of three- and four-place planes declined six percent but their combined total of 1109 units again topped two-place shipments, this time by 40 percent, or 316 planes.

The February 1947 civil plane shipments were:

	February	*January*
Total	1914	2166
By number of places:		
2-place	793	969
3- and 4-place	1109	1176
Over 4-place	12	21
By number of engines:		
Single engine	1903	2146
Multi-engine	11	20
By total rated hp (all engines):		
1-74 hp	332	298
75-99 hp	455	666
100-399 hp	1114	1179
Over 399 hp	13	23

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DEPARTMENT OF COMMERCE
W. Averell Harriman, *Secretary*

Civil Aeronautics Administration
T. P. Wright, *Administrator*
Ben Stern, *Asst. Administrator for Aviation Information*

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CAA Answers

Q—What color, or combination of colors, should an aircraft (in flight) be painted to afford the best possible likelihood of it being noticed from any angle by observers on the ground and in the air? G. H.

A—Probably no one color as such can be relied upon to make a plane more visible from all angles, and from both the ground and another plane. All colors tend to look dark from the ground and they also black-out at a distance. The ability of the color to reflect light enters into the picture, since the only detectable difference between colors, in some instances, lies in the varying reflection factor.

However, the colors most widely accepted for their attention-attracting qualities to other planes in flight are either chrome yellow (orangish shade) or international orange (ripe tomato shade), with chrome yellow most generally preferred. The Navy used chrome yellow on its training planes during the war for the best average visibility.

Color experts agree that NC numbers painted in black will furnish the maximum contrast on chrome yellow, and either black or white will provide the most contrast on an international orange background. The only requirement of the CAA is that the identification marks be painted on a clearly contrasting background.

The preference for chrome yellow or international orange is based on the principle that these are the two colors which vary most from the flight backgrounds of a plane—the blue of the sky, and the brown and green of the earth.

The Navy is now planning another approach to the problem of making a plane more visible from another plane—that of using color on a metal plane to emphasize the plane's silhouette. In new visibility studies, the Navy expects to test the effectiveness of outlining planes in color and also of using combinations of colors in making planes stand out in better relief from their backgrounds.

The Federal specification for chrome yellow is TT-P-59, and for international orange, TT-P-53.

New York to Calcutta Service

Pan American Airways expected to begin service from New York to Calcutta, India, about May 15, extending operations across India from Karachi. The carrier now makes one flight a week from New York to Karachi, with stops at London and Istanbul, Turkey.

Castered-wheel Gear Proves Its Worth In 50-mile Gusts

The March wind in Washington was variable with gusts up to 50 miles an hour. It rattled the steel-framed windows in the Commerce Building.

John H. Geisse, Consultant for the Civil Aeronautics Administration, phoned Frederick B. Lee, Executive Assistant to the CAA's Administrator.

"Looks like a swell day for flying," he said. "How about it?"

"I was thinking the same thing. I'll call Child."

Didn't Faze Them—Then Mr. Geisse and Mr. Lee and Lloyd Child, Assistant to the Administrator for Personal Flying Development, hurried to Washington National Airport and spent the rest of the day violating one of the most important rules of safe flying laid down by the CAA. They took off and landed the CAA's new castered-wheel airplane cross-wind with the wind blowing straight across the runway in gusts up to 50 miles an hour.

They did have a mild argument with the traffic control man in the tower, however. He had reports of a flag pole blown down at nearby Camp Lee, of airplanes overturned at nearby private fields, and he could see from his "gold-fish bowl" how mechanics had to lean forward against the wind as they serviced airliners on the ramp below. He advised strongly against using a runway at right angles to the wind.

Means One-strip Field—"We need more bad days like that to test this gear," Mr. Geisse said later. "We consider this one of the most important developments in aviation in many years because of the effect it can have on the size of airports. It means simply, that airplanes so equipped can use single runway strips in almost any kind of weather, and that means it will not be necessary to build personal flying airports with runways in many directions. Those flights proved that we can land castered-wheel planes in weather heretofore considered too severe for safe flying in any kind of light planes."

The new landing gear is being developed for the CAA by the Fairchild Aircraft Division, whose plane the men were flying; the Goodyear Aircraft Division, whose castered-wheel gear for the cub-type plane is being tested, and the Firestone Aircraft Company, now working on such a gear for tricycle-landing gear planes. Mr. Geisse, who originated the development for the CAA, took occasion to assign proper credit for the original idea.

"Louis Bleriot, first man to fly the English Channel, had castered wheels on his aircraft. In this, as in many other aviation matters, we are merely picking up a good thing and applying it again."

CAB Reports Economic Data On Cities Without Air Service

Facts on U. S. cities which do not have air service are available in a report compiled by the Civil Aeronautics Board. This report shows that 91 percent of the cities with 2500 or more population, did not have air service on April 1, 1945. It serves as a reference in evaluating the air traffic possibilities of smaller cities and in planning new routes.

Economic data given for each city without air service on that date include the population (1930 and 1940 census), post office receipts, retail sales, income tax returns and the number of employed persons. The distance to the nearest airline stop is also tabulated.

The report is titled "Economic Characteristics of Urban Points," and is dated May 1946. It is on sale at 25 cents a copy, by the Superintendent of Documents, Washington 25, D. C.

Civil Aviation Highlights

Airports in operation, April 1	4,728
Commercial	2,124
Municipal	1,484
CAA intermediate	198
Military	760
All others	162
Scheduled Air Carrier Aircraft, April 1	846
Domestic operations	694
International operations	152
Total Registered Aircraft, April 1	92,247
Civil Aircraft Production, February	1,914
Two-place models	793
Three and four-place models	1,109
Over four-place models	12
Washington National Airport Operations, March:	
Scheduled Air Carrier:	
Passengers departing	47,153
Passengers arriving	40,478
Aircraft arrivals and departures	8,342
Aircraft arrivals and departures other than scheduled air carrier	4,837
San Francisco Municipal Airport Operations, February:	
Scheduled Air Carrier:	
Passengers arriving	25,907
Passengers departing	25,404
Aircraft arrivals and departures	3,884
Air Traffic Activity:	
Aircraft Operations handled by Airport Control Towers: (in thousands)	
January, 1947	1,043
January, 1946	554
February, 1947	1,015
February, 1946	595
Fixed Posting handled by Airway Traffic Control Centers: (in thousands)	
January, 1947	727
January, 1946	657
February, 1947	691
February, 1946	570

Aircraft Operator's Radio Permit Easy for Private Pilots to Get

A permit for operating an aircraft radio transmitter may be obtained immediately and on the basis of a few simple questions, T. P. Wright, Administrator of Civil Aeronautics, reminds private pilots.

"All of the complex regulations which once made these operators' licenses difficult to obtain have been eliminated," Mr. Wright said. "However, we still find private pilots uninformed on the change, and are making this announcement again to save trouble for all.

"This is the simple way in which an authorization to operate a radio telephone transmitter in an aircraft is obtained: The applicant appears in any of the Federal Communications Commission field offices, or before any CAA flight examiner who has been designated by the FCC to issue the permits, proves he is a United States Citizen, that he has need of such an authorization, and that he understands the few simple rules and regulations. He is given a card granting the authorization then and there. FCC offices are listed under United States Government in phone books, and there are some 30 of them throughout the country. Mostly, they are in downtown offices. There are more than 1000 CAA designated flight examiners. Mostly, they are located at airports.

"The 'examination,' if it may be so described, consists of a few questions establishing the ability of the applicant to transmit and understand spoken messages in English, and to understand the simple rules governing the use of such equipment. He is also given simple, printed instructions for its use."

New Research Group Tests "Noise Curbs" For Personal Planes

Making the airplane quiet and safe enough for use on convenient neighborhood landing areas is the first objective of the Aeronautical Research Foundation, a new non-profit organization in Boston.

The Foundation's work will be in line with the efforts of the Civil Aeronautics Administration to eliminate noise and hazards so that new landing areas may be constructed at convenient locations.

Contract With NACA—The CAA has taken an active part in negotiation of a research contract between the National Advisory Committee for Aeronautics and the new Foundation. Technical and other assistance will be provided by the CAA.

Working under contract with the National Advisory Committee for Aeronautics, the new organization will build into aircraft the latest scientific noise reduction and safety developments and field test them in an effort to prove that planes can be "good neighbors."

The Foundation will install and test on its flight equipment the multi-blade type of slow-turning propeller for light planes recently developed by the NACA, but yet to be used on such aircraft.

The "noise curbs" will be tried out at outlying airports. Demonstration flight operations will then be started on an experimental landing area within metropolitan Boston.

Plan Model Airpark—After establishing standards which will make neighborhood landing areas more popular, the sponsors of the project hope to set up as a national model in greater Boston the first metropolitan airpark meeting those standards. The Foundation, organized within the past year on a non-profit basis and backed by the government and industry, will at the outset be largely under the technical direction of men recruited from the Harvard and Massachusetts Institute of Technology faculties, but it has no official connection with either institution. Aviation specialists from other educational institutions may also participate.

New Booklet Draws Picture Of Job Situation in Aviation

A new booklet of benefit to those who desire aviation jobs has just been prepared, with the assistance of the Civil Aeronautics Administration, and published by the U. S. Bureau of Labor Statistics. It is titled "Employment Opportunities in Aviation Occupations."

This booklet covers the entire field, from airline pilot to stock and store clerks. It gives a fair estimate of the opportunities for various jobs, and all the details required on qualifications, earnings and opportunities.

In general, the tone of the report is not encouraging. "Having all the minimum qualifications for a job will by no means be a guarantee of employment during the next few years of labor surplus in aviation. In most occupations only the most highly qualified individuals will have a chance of being hired in the near future."

This situation, directly the result of the great amount of aviation experience and training in the air war, colors almost every job described in the book. While the general picture is not optimistic, the booklet is valuable because it gives a fair and dependable picture.

The booklet is recommended as useful to operators of flying schools, teachers of aeronautical classes, trade schools, and all those in the industry who meet applicants for aviation jobs.

The booklet sells for 20 cents at the Superintendent of Documents, Washington 25, D. C.

CAB Awards New Feeder Service, Adds Trunkline Stops in Southeast

More than 3000 miles of routes in the Southeastern area were awarded two new feeder airlines, Piedmont Aviation, Inc., and Southern Airways, Inc., by the Civil Aeronautics Board in its decision issued April 4 in the Southeastern States Case, seventh of the regional cases to be decided.

In the same decision, five trunkline carriers, American Airlines, Delta Air Lines, Eastern Air Lines, Pennsylvania-Central Airlines and Transcontinental and Western Air were given additional service in the area.

The feeder decision in this case increases the total feeder mileage in this country to approximately 19,000, spreads the benefits of this local-type air service to 38 states, and brings to 15 the total number of carriers approved for this type of air travel.

The Southeastern area includes Virginia, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Alabama, Mississippi and portions of Ohio, Indiana, Florida, Missouri and Maryland.

Piedmont Aviation—Piedmont Aviation's 1625 miles of routes traverse the northern portion of the area, touching 25 cities, eight of them without present airline service. Piedmont's routes will furnish east-west services across the Appalachian range from Norfolk and Richmond, Va., to Cincinnati, Ohio, and from Louisville, Ky., to North Carolina cities in the Piedmont region. Surface transportation in this section is slow and circuitous, creating a need for local air service, the Board indicated. Best rail time between Louisville and Wilmington, one of the east coast terminals on Piedmont's route, is 36 hours and 45 minutes, and best bus time is 33 hours and 25 minutes. Travel time by air is 4 hours and 39 minutes.

Piedmont has been engaged in fixed-base operations, with main offices at Winston-Salem, N. C., since 1940. The activities of the president and treasurer, Thomas H. Davis, date back to 1934. At the time of the hearing, the company employed four pilots, nine licensed mechanics, 28 specialized and unlicensed mechanics and one licensed radio technician. The company also has most of the ground equipment it will need.

Southern Airways—Southern Airways' 1500 miles of routes lie in the southern portion of the area and will supply local service to points between Memphis, Tenn., and Charlotte, N. C.; Atlanta, Ga., and Jacksonville, Fla.; and Columbus, Ga., and Charleston, S. C. Altogether, Southern will serve 23 cities, 10 of them without present airline service.

Southern's president and director, Frank W. Hulse, has been actively engaged in aviation since 1927. He is also president of five other affiliated companies engaged in some phase of aeronautics in the southeastern part of the country. Prior to the war the Southern Airways companies were the largest fixed-base operators in the southeast, and during the war they performed extensive services for the Army. All of the officers and directors, with one exception, are licensed pilots.

As in the North Central Case, the temporary three-year certificates for feeder service will be withheld until airport conditions permit service to a substantial number of points on the new routes.

New Memphis Service—Finding a need for trunkline service from Memphis directly east to Chattanooga, Tenn., and the Piedmont cities served by Pennsylvania-Central and Eastern, the Board extended PCA's route 51 from Knoxville, Tenn., to Memphis, via Chattanooga and Huntsville, and extended Eastern's route 5 from Greenville, S. C. to Chattanooga. These extensions, the Board stated, will connect Memphis and Chattanooga, and in addition give them direct one-carrier service to Asheville, Hickory, Winston-Salem, Greensboro-High Point, Raleigh-Durham and Rocky Mount, N. C., and Richmond and Norfolk, Va., for the first time. Charlotte, N. C. and Greenville and Spartanburg, S. C. will get direct one-carrier service to Chattanooga and two-carrier connecting service to Memphis.

Neither PCA's nor Eastern's application alone would provide the needed service, the Board pointed out.

PCA's route 51 was also extended from Rocky Mount, N. C., to Washington, D. C., via Richmond, giving this route two strong terminals, Washington and Memphis, in place of Norfolk and Knoxville. The new cut-off will provide fast usable service between route 51 cities and Richmond and Washington, the Board stated. PCA's previous operations to Washington were conducted over the more circuitous combination of routes 51 and 14 from Rocky Mount by way of Elizabeth City, N. C. and Norfolk, Va.

New intermediate points added to PCA's route 51 are Winston-Salem and Hickory, N. C.

Eastern Additions—In addition to the Greenville-Chattanooga extension, a number of new intermediate points were added to Eastern routes. These are Pensacola, Fla., Anderson, S. C., and Danville, Va., on route 5; Florence, S. C. on route 6; Waycross and Rome, Ga., and Huntsville, Ala., on route 10; Ashland, Ky.-Huntington, W. Va., on route 47.

Richmond was added as an intermediate point between Washington, D. C. and Lynchburg, Va., on American's route 4, giving this city its first direct air service to the West.

TWA's route 58 was amended to include Louisville, Ky., as an intermediate point between Cincinnati and St. Louis, thus affording direct air service for the substantial volume of traffic from Louisville to other cities on TWA's system, particularly Detroit, Toledo, Pittsburgh, Kansas City and San Francisco.

Delta's route 24 was extended from Meridian, Miss., to Atlanta, Ga., via Selma and Montgomery, Ala., and Columbus, Ga., and was also extended from Atlanta to Savannah, Ga., via Macon, Ga. The carrier's route 54 was amended to include Chattanooga as an intermediate point.

Dissents on Major Issues—Member Clarence M. Young filed a separate opinion in which he dissented from the action of the majority on two major aspects of the decision, expressing disagreement with the extensions of Route 51 granted to PCA, and with the establishment of the two local feeder operators.

Discussing the PCA awards, Colonel Young stated that the extension established an excessive amount of duplicating service, and would not as effectively meet the need for service between Memphis and the Piedmont region as the extension of Eastern from Greenville to Memphis. He also expressed the view that by making the grants to PCA at this time, the majority has limited the Board's freedom of action in the pending Boston-New York-New Orleans proceeding, which involves services substantially overlapping the route extensions now authorized to PCA.

Trunkline for Local Service—With respect to the awards for local and feeder operations, Colonel Young took the position that in establishing two additional local systems similar in character to others previously authorized, the majority has moved beyond the limits of genuine experimentation. He pointed out that ". . . the Board has not yet called upon an existing trunkline carrier to conduct a truly local type of service in the areas adjacent to its route system, even though it seems entirely probable that such a carrier could turn to great advantage both its existing organization and its know-how in air transportation," and stated that since practically all of the smaller cities in the area are located in proximity to trunk-line routes, the Board should have taken advantage of the particularly favorable opportunity to test the feasibility of such service as an important phase of the over-all local service experiment.

Southern and Piedmont were granted the following routes:

Southern Airways Routes—(a) between the terminal point Memphis, Tenn., the intermediate points Tupelo and Columbus, Miss., Tuscaloosa, Birmingham, and Gadsden, Ala., Atlanta, and Athens, Ga., and Greenwood, Greenville, Spartanburg, and Rock Hill, S. C., and the terminal point Charlotte, N. C.; (b) between the terminal point Atlanta, Ga., the intermediate points La Grange, Columbus, Albany, Moultrie, and Valdosta, Ga., and the terminal point Jacksonville, Fla.; and (c) between the terminal point Columbus, Ga., the intermediate points Macon and Augusta, Ga., Orangeburg, S. C., and the terminal point Charleston, S. C. The temporary certificate authorizing this operation will be issued after a further showing is made as to the adequacy of airport facilities.

Piedmont Aviation Routes—(a) between the alternate terminal points Louisville, Ky., and Cincinnati, Ohio, the intermediate points Lexington, Ky., Bristol, Va., and beyond Bristol (1) the intermediate points Asheville, Charlotte, Southern Pines-Pinehurst-Aberdeen, and Fayetteville, N. C., and the terminal point Wilmington, N. C., and (2) beyond Bristol the intermediate points Winston-Salem, Greensboro-High Point, Raleigh-Durham, and Goldsboro, N. C., and the terminal point New Bern, N. C., and a seasonal operation between New Bern and Morehead City, N. C., between May 1 and October 31 of each year; (b) between the terminal point Cincinnati, Ohio, the intermediate points Portsmouth, Ohio, Ashland, Ky.-Huntington, W. Va., Charleston, Beckley, and Princeton-Bluefield, W. Va., Roanoke, Lynchburg, Charlottesville, and Richmond, Va., and the terminal point Norfolk, Va.; (c) between the terminal point Roanoke, Va., the intermediate points Danville, Va., and Greensboro-High Point, Raleigh-Durham, and Fayetteville, N. C., and the terminal point Wilmington, N. C.

ICAO Assembly

(Continued from page 49)

Serving as consultants are W. Stuart Symington, Assistant Secretary of War for Air, with Brackley Shaw as alternate; John N. Brown, Assistant Secretary of Navy for Air, with Charles O. Cary as alternate; Robert S. Burgess, Second Assistant Postmaster General; and Gerald Brophy, former U. S. Representative to the PICAO Council.

Also attending are advisers from Congress, government agencies, and industry, with representatives of U. S. flag airlines engaged in international air commerce invited as observers.

Commerce and CAB advisers include Glen A. Gilbert and Walker Percy of the CAA; Enar B. Olson of Commerce; Robert Hoyt, G. N. Calkins and Robert J. G. McClurkin of the CAB.

E. S. Prentice of the State Department is technical secretary of the delegation, and Richard Wheeler of the State Department is administrative secretary.

Visa Time Extended

Continuing validity of visas for the convenience of Civil Aeronautics Administration personnel whose duties take them into foreign countries has been established by 24 foreign countries. Nearly all Latin American Republics are included in the agreement, which was effected by the CAA Office of Foreign Operations in conjunction with diplomatic representatives of the countries involved. The continuing period varies from two years to three months; Belgium granting the longest period, two years, and the Netherlands the shortest, three months.

Routes from Belgium, New Zealand Granted Foreign Air Carriers

Air service from Belgium and New Zealand to the United States has been authorized by the latest foreign air carrier permits issued by the Civil Aeronautics Board.

The Belgian air carrier, La Societe Anonyme Belge D'Exploitation de la Navigation Aerienne (SABENA), has been granted service from Brussels to New York City with intermediate stops at Shannon, Eire, and Gander, Newfoundland. And British Commonwealth Pacific Airlines (BCPA) may serve the U. S. points, Honolulu and San Francisco, on its route from New Zealand to Vancouver, British Columbia. Other intermediate points are the Fiji Islands and Canton Island.

Good Traffic Prospects—In issuing the permit to SABENA, the Board said that a community of interest and a substantial air traffic potential exist between the United States and Belgium. The Board also noted that reciprocity, as well as terms of the bilateral air agreement signed by Belgium and the United States April 5, 1946, dictate that a Belgian air carrier be allowed to operate between Belgium and New York via the British Isles.

Belgium agreed to grant to one or more U. S. carriers the right to establish international services on routes between the United States, Brussels, Belgium, and India and beyond; and between the United States, the Azores, Dakar, Leopoldville, and the Union of South Africa. In turn the United States grants to one or more Belgian carriers the right to serve New York by a direct route via the British Isles.

SABENA plans to use the American-made Douglas DC-4 and DC-6 aircraft in its trans-Atlantic service, and expects to schedule two flights a week between Brussels and New York. At the time of the hearing, SABENA's fleet included three DC-4's, and it had placed orders for two DC-4's and three DC-6's.

Second Permit—BCPA, the carrier designated by both Australia and New Zealand to conduct operations to the United States, already holds a permit for service to Honolulu and San Francisco on its Australian-Vancouver route.

The second permit is based on a bilateral agreement in force since Dec. 3, 1946, between New Zealand and the United States.

The U. S. air carrier, Pan American Airways, serves both Brussels and New Zealand.

NACA Reports on Progress In Personal Aircraft Research

An up-to-the-minute report on the scope and status of its personal-aircraft research program has been released by the National Advisory Committee for Aeronautics, the nation's aeronautical science agency.

The report presents a detailed analysis of projects relating to personal aircraft which have been completed, those now in progress and those scheduled for the immediate future. These projects cover a wide range of personal aircraft technical problems demanding rapid solution, many of which have been suggested by the industry or government agencies.

Titled "Status of NACA Research Applicable to Personal Aircraft," the report covers a total of 13 major fields of investigation including noise reduction, propellers, spinning and safety, helicopters, powerplants and structural problems.

The final value of such information, the NACA points out, is to be found in the results obtained through its application to new design. Most recent example is the appearance of prototype lightweight, multi-bladed propellers for small aircraft. These are the result of NACA research findings on propeller noise reduction over the past few years.

CAB Economic Regulations Placed on Sale

The Economic Regulations, issued by the Civil Aeronautics Board, are being printed and put on sale like the Civil Air Regulations.

Thirteen parts of the Economic Regulations are now available in printed form, and work on the remaining three will be completed soon. Altogether there are 16 parts.

The Economic Regulations contain the procedures air carriers must follow in applying for route certificates, filing of accounts, reports and tariffs, obtaining approval for agreements and interlocking relationships, and similar requirements governing commercial operations.

The regulations on sale are listed below. Address requests to the Superintendent of Documents, Government Printing Office, Washington 25, D. C., with accompanying payment. Stamps are not accepted.

Part 208—Mail Transportation and Service, 5 cents.
Part 216—Rates for Transportation of Mail, 5 cents.
Part 228—Free and Reduced-rate Transportation, 5 cents.
Part 238—Certificates of Public Convenience and Necessity, 10 cents.
Part 241—Permits for Foreign Air Carriers, 5 cents.
Part 248—Interlocking Directors and Officers, 5 cents.
Part 251—Operating Agreements, 5 cents.
Part 280—Forms and Applications, 5 cents.
Part 285—Rules of Practice, 10 cents.
Part 287—Procedure, Evidence and Definitions, 5 cents.
Part 301—Organization, Delegations of Authority, and Public Information, 5 cents.
Part 302—Description of Functions; Course and Method by Which Functions are Channeled; Scope and Contents of Documents, 10 cents.
Part 303—Substantive Rules, 5 cents.

United States and Argentina Agree on Air Transport Terms

The United States and Argentina have concluded a bilateral air transport agreement on terms that allow the flag carriers of the two countries to carry international traffic on a competitive basis.

Agreement on "fifth freedom" traffic rights and unrestricted schedules and frequencies followed a final 14-hour session in Buenos Aires April 30. Civil Aeronautics Board Chairman James M. Landis, bearing the special rank of Minister, led the discussions.

FAMA, an airline owned by the Argentine government, will conduct operations to the United States, and specific routes will be determined when the airline has made more definite plans.

The Argentina negotiations mark the third time Chairman Landis has participated in drawing up international air transport agreements with other countries. In September 1946, he took a leading part in negotiating the Brazilian-U. S. agreement based on the five freedoms. Shortly afterward he led the London discussions in which the United States and United Kingdom decided to base their air transport agreements with other countries on the principles drawn up at Bermuda in February 1946.

In the successful meeting at Bermuda, which has since become known as the Bermuda agreement, the full Board participated prominently in discussions with the United Kingdom. As a result, England reversed the stand it had taken at the Chicago International Civil Aviation Conference in 1944, and accepted the U. S. concept of freedom of transit for commercial air transportation.

CAB Acts to Study "Need Mail" Factors Of Two More Lines

The Civil Aeronautics Board has ordered an investigation of the finances, routes and operations of Pennsylvania-Central Airlines and the domestic system of Chicago and Southern Airlines, bringing to four the number of carriers which will be examined as a result of requests for need mail payments.

Similar investigations have been ordered for Colonial Airlines and Northeast Airlines. In earlier action the Board also set in motion proceedings to re-examine the unoperated routes awarded Chicago and Southern in the Caribbean area.

To Study Route Patterns—Investigations of PCA's and Chicago and Southern's domestic routes are necessary, the Board stated, to determine whether the increasing financial dependence of the two carriers upon the government is due to uneconomic characteristics of their route patterns. The Board is also seeking ways in which financial aid through need mail payments can be decreased.

Previous mail payments of both carriers have been 60 cents a ton-mile, based on the actual number of pounds carried and miles flown.

On January 14, however, PCA requested a mail rate of 18.12 cents a revenue plane course mile for June 1, 1942, through Dec. 31, 1946, and 30 cents a revenue plane mile thereafter.

Chicago and Southern's latest petitions request a mail rate for its domestic routes of 19.53 cents a plane mile from Jan. 1, 1946, through Aug. 31, 1946, and 42.5 cents a plane mile thereafter.

Apply New Formula—In mail rate actions issued simultaneously with the investigation orders, the Board offered a mail rate formula which will meet the needs of the carriers for higher compensation for a limited period without altering indefinitely their status as service rate carriers.

PCA's temporary mail pay rate will remain at 60 cents a ton-mile for its 45,000 miles of routes, but the ton-miles will be computed on the basis of a theoretical load beginning with 700 pounds on March 1, 1947, and diminishing from time to time until after Oct. 1, 1948, when the load will be reduced to 250 pounds.

When daily mileage flown exceeds 45,000 miles, the theoretical poundage will be reduced in the same proportion as the mileage is increased. Fewer pound-miles will be charged and the compensation will be adjusted accordingly.

A lump sum of $385,000 will be paid PCA for the period from Jan. 14, 1947, through Feb. 28, 1947.

The Board has suggested the same type of temporary mail pay formula for Chicago and Southern, with the 60-cent-a-ton-mile rate based on a daily average of 19,000 miles and computed on a series of theoretical mail loads beginning at 600 pounds for January, February and March of this year. By July 1, 1948, the load will be figured on 250 pounds.

The sum of $1,054,000 was proposed for the period from June 1, 1946, through Dec. 3, 1946.

To Guard Wrecked Planes

Member nations of the International Civil Aviation Organization will become mutually responsible for the guarding of airplanes of an affiliate state which are involved in accidents outside the territory of the nation of registry. This recommendation was recently made by the Accident Investigation Committee, and approval of the ICAO is expected. Custody and guard over the wrecked craft will continue as long as necessary for investigation. Remnants of the plane will remain unmoved except in cases where it is necessary to remove victims or mail.

Burden and Wright Propose Government Aid In Developing a More Useful Personal Plane

(Continued from page 49)

useful vehicles—and is less than one-half the number of two-car families. It should be within our power to make aircraft as useful as this to the private owner in the next eight years.

Phases in Program—"Obtaining the maximum possible development in the shortest possible time will require a simultaneous attack on a number of problems—all of which must be worked on if the job is to be done.

"In our opinion the chief of these are:

1. The implementation of a federal-aid airport program with ample appropriations.

2. The simplification of federal regulations applying to personal aircraft.

3. Federally-assisted civil flight training.

4. The rapid improvement of personal aircraft design by an energetic program of development which would involve: (a) a research program on the basic elements necessary to build improved personal aircraft by National Advisory Committee for Aeronautics; (b) energetic development by the industry of advanced types of personal aircraft; (c) substantial appropriations to CAA for development contracts in those areas of personal aircraft development which neither the industry nor the military services are actively pushing for economic or other reasons."

The first three phases are progressing satisfactorily, Mr. Burden said, but pointed out that the least has been done on the fourth point—that dealing with government financial assistance in improvement of personal aircraft.

The Problem

Examining the problem facing the industry, he said "The private plane buyer must be offered greater utility. For some time, private flying has been caught in a vicious circle of 'low utility and high costs.' This familiar adage must be replaced by 'greater utility and lower costs' if civil aviation is to develop to its fullest extent.

"In my talk before the Institute of Aeronautical Sciences, on January 30, 1947, I broke down the word utility to show that the personal aircraft must: (1) enable the owner to get from his point of origin to his point of destination substantially faster than surface transport; (2) do so at a reasonable cost; (3) be capable of safe use in reasonably bad weather as well as good—in other words, be reliable; and (4) be easy to learn to fly.

"Utility and cost are inexorably bound together in this as in other fields. The growth of the electric refrigerator market is a good example of this relationship between utility and price, and their combined effect on sales volume. By 1930, utility (chiefly a matter of dependability and convenience in the case of the electric refrigerator) had increased to the point where the average consumer wanted one. Yet the price was so high ($600) that he would put up with the inconvenience of an ice box rather than spend what he considered too much money for the conveniences offered in an electric refrigerator.

"Only when the average price came down to $170 in 1933 did the consumer consider that the utility offered was worth the price. Evidently this price level represented the balance between utility and price that was necessary to reach a mass market, for sales then went into the millions for the first time, with average price remaining within a few dollars of the $170 figure throughout the period 1933-1939.

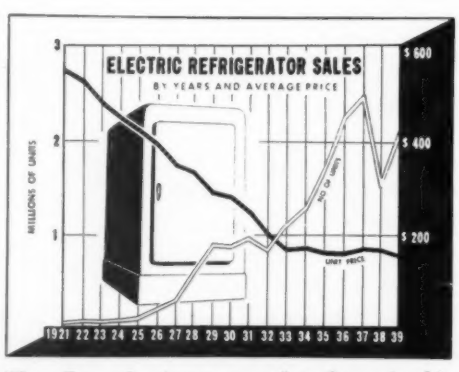
"In refrigerators, it was largely a question of bringing the price down to the relative utility offered. In personal planes the problem must be attacked from both sides. But the goal is the same. Cost must be cut to a level which will bring personal planes within the reach of a mass market. Utility must be increased to the point where large numbers will be willing to spend money on planes rather than other products.

"The utility approach is fundamental, but it must be emphasized that utility and cost are interdependent. By increasing utility, we raise the number of persons who desire a private plane. But to expand the market we must also cut the cost to a point where they can not only afford to buy but where they will buy a plane in preference to something else. A dollar spent on a personal plane must give equal or greater satisfaction than alternative ways of spending that same dollar.

Must Overcome Obstacles—"Before initiating any program, it is always helpful to take a look at the problems one is likely to face. The personal plane industry faces a number of important obstacles, each of which can be overcome, or at least minimized over the long term by an improved product. The following examples are, of course, not all-inclusive.

"First, the private plane owner is a hard-headed realist. He has clearly demonstrated that he must have both greater utility and lower costs. When his need was not met, he quickly abandoned the private plane market—one-third after one year of ownership; one-half after less than two years; and 83 percent after less than 2½ years, according to a CAA survey conducted in 1940. At present the 85,000 registered civil aircraft are changing hands at the rate of 2000 a week. We all sincerely hope that this record will not continue and the best insurance against such a recurrence lies in rapid improvement of personal plane design.

"Second, despite record 1946 production, small-plane manufacturers face a highly uncertain future. On one hand, civil aircraft manufacturers had their biggest year in history in 1946. Shipment of 34,900 planes valued at $170,800,000 surpassed by nearly 75 percent the CAA estimate on total civil plane production for the first full peacetime year. Furthermore, the 1946 figures exceed the previous all-time peak year of 1941 by 410 percent. On the other hand, there is much evidence that the pent-up wartime demand for civil aircraft was largely met by the 1946 output of new planes and by the sale of some 31,000 surplus military aircraft of types which could be licensed for civil use. Production has tapered off since hitting a peak of 4700 planes in August to 1900 in December. Admittedly, seasonal influences account for a part of this decline. At the same time, other more basic factors have played their part. Several lightplane manufacturers have been out of production for extended periods. Others have been going through reorganization and bankruptcy proceedings. Few ended the year with balance sheets written in black ink, as far as we have been able to determine, and the backlog of firm orders in the case of most companies does not exceed four months' production.



The effect of prices upon sales, shown in this graph, applies to the marketing of planes as well as refrigerators.

"Third, a CAA publication just off the press entitled 'An Age Study of the Flying Public' highlights many significant facts about American flyers. One of the most thought-provoking items shows that when Americans are young and have little money, they evidence their tangible interest in flying by obtaining pilot certificates. When they get older and begin to earn the kind of incomes necessary to own and operate a personal plane, they don't continue their interest in private flying. In fact, we find almost an inverse relationship between the percentage distributions of pilots and wage and salary workers earning $5000 or over.

Need More Close-in Airports—"Fourth, there is still an insufficient number of airports. The number of airports in the U. S. increased four-fold between 1927 and 1946, as the total advanced from 1036 to 4490. In the same period, registered aircraft increased 31 times (2740 vs. 85,000) and certified pilot rolls, stimulated by military competency issuances immediately following World War II, zoomed upward to a point 255 times over 1927 (1572 compared to 400,061).

"Fifth, many airports throughout the country have been located with an eye to low land cost rather than accessibility. This was about as logical as locating a parking lot or garage and service station miles from the center of town and the buying public because farm land could be acquired at low cost. Landing facilities for personal flying should be as near as possible both to residential areas and urban centers. Design developments which would enable the personal plane to use a single landing strip regardless of wind direction would increase its effective door-to-door speed on short trips even more than faster cruising speeds. That it is almost impossible to get the land for close-in conventional airports even in moderate-size cities is evident from the distribution of airports according to their distance from the community they serve.

"On January 1, 44 percent of the nation's airports were located more than three miles from the city or town they serve; 15 percent were over five miles away. Some states were much worse off than the national averages would suggest, for the distances given are airline distances, not distances by road. Significant as these figures are, they don't tell the whole story.

Plane for Family—"Sixth, until very recently, there has been a lack of a suitable family-size airplane model. Because the airplane's usefulness has been limited, it has sold in limited quantity, and its small production has meant high costs. In 1940 there was a domestic civil airplane output of some 6800 planes, almost 81 percent one- or two-place models with an average cost of about $1500. That same year more than three million new cars were sold, 85 percent of them priced under $750 wholesale, and 77 percent were sedans seating five persons.

"Admittedly, the coupe offers sufficient utility to capture a certain segment of the American auto market. But if the auto industry depended solely on such customers it would never have attained such a dominant place in American industry because they normally account for only about 20 percent of total auto sales. Aviation analysts have been watching carefully the trend toward larger airplane models and were impressed by the January 1947 record which showed that shipments of three- and four-place planes exceeded those of the familiar two-seater for the first time.

"The shift from the familiar two-place model to a four-place, higher utility plane is a major change and we realize it takes important changes in production techniques. But again turning to the history of the automobile, probably our most useful piece of durable goods, it is remembered that the shift from open to closed cars which took place in the 1920's, was also a major change—and one that paid dividends.

"Seventh, dependence upon good weather. In almost any conversation with a private plane owner

about the utility of his airplane, the subject of weather comes up. The discouraged, often bitter, tone of his remarks leads you to believe that nature has planned a conspiracy to keep him on the ground and to make his plane worthless to him. The Weather Bureau has recently (December 1946) completed a valuable study of 'Classified Flying Weather for the United States.' It answers the private plane owner's question 'What percentage of the time can I expect weather conditions which will permit operations at a particular airport or along a particular route?' The Weather Bureau presentation shows that adverse weather conditions are actually a serious limiting factor in many sections of the country.

"Finally, because of the airplane's lack of utility and the rapid turnover in ownership and the small proportion of pilots who continue to be airplane owners, the great bulk of flying continues to be instructional rather than personal. Preliminary information from the current CAA survey of aircraft owners shows that more than half of all civil flying falls in the instructional category, suggesting perhaps that the title of this talk should be 'Instructional' instead of 'Personal Plane Development.' As long as this condition remains, lightplane production will be primarily dependent upon original and replacement sales to flying schools and we can all forget our hopes that there will be a mass market for the private plane.

"Another significant finding of the CAA survey is that the aircraft owner averages only about 60 hours a year in personal flying. I want to emphasize that this is a preliminary figure, subject to change when the final results of our survey are analyzed."

The Potential Market

In discussing the potential market for private flying, Mr. Burden said, "it is significant that in 1945 there were 1.2 million spending units (families) in the United States with an income of $7500 per year. The median income of this group was $10,000 and their median liquid assets $7500. This figure of 1.2 million checks closely with that of one million families which own two or more cars.

"It would appear that if the personal aircraft can be made useful enough, this potential market of one million families who are financially able to own an airplane should produce far more than our current total registrations of 85,000 civil aircraft.

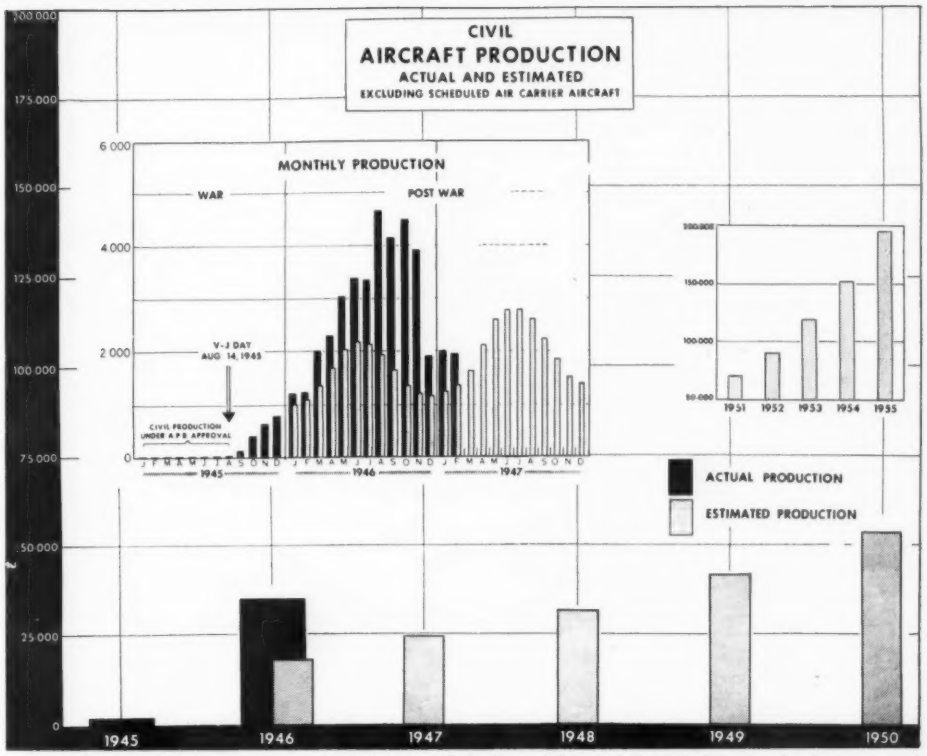
"As the cost of the personal aircraft is reduced, the potential market expands greatly.

"The group with incomes of $5000 or over, for example, totals 3.4 million spending units.

"The foregoing analysis may seem somewhat academic. However, in analyzing the present group of individuals who are doing the private flying in the country, the Air Market Data Service, in a survey based on 1946 data show that the median income of aircraft owners was about $5000 and that the income bracket of $3500 to $5000 contains most of the owners. On analyzing their data further they find that 35 percent of the respondents to the survey were business proprietors and another 20 percent were farmers and professional men. This could well explain why so many of the people in the lower income brackets can afford to fly. And from the analysis made above, this market has been shown to be capable of being vastly expanded.

"The foregoing analysis does not make our suggested goal of 400,000 registered aircraft in 1955 with production of 200,000 in that year seem economically impossible if the necessary technical progress can be made.

"Reaching such a goal would be of enormous value to our air strength as well as to our national economy. Assuming an average price of $1750 per aircraft at that time, it would mean that personal aircraft production would total $350,000,000 for the year, or almost four times the estimated transport production at that time. This is of enormous importance in terms of building a healthy, ultimately self-supporting manufacturing industry as a backlog for national defense and an important contribution to our national economy.



NOTE: The CAA production estimates in "Civil Aviation and the National Economy" depicted above were based on an annual registration increase of 30 percent, a 20 percent replacement rate (5-year life), and an export market that would require 25 percent of annual domestic production.

Improvement Rate Inadequate—"There is, I believe, fairly general agreement that present characteristics and utility of light aircraft and helicopters for personal use are not sufficiently advanced to command a large market, much less a mass market.

"There also seems ample evidence that the funds available for such development under present policies will be inadequate to obtain maximum progress.

"First, the general uncertainty of the aircraft market and the weakened financial condition of many manufacturers discourages them from spending large amounts of development money, particularly on the more radical and experimental types of development which are not certain to produce increased sales in the immediate future.

"Second, the decrease in military budgets will result in decreased development funds, particularly in the field of liaison type aircraft, roadable aircraft, and the aspects of helicopter design of primary interest to the personal flyer such as simplified control. This field of experimentation inevitably has a low priority in terms of military requirements.

"The industry will presumably increase its development expenditures if it sees sufficient prospect of near-term sales increases to justify it or if due to increased military expenditures its general prosperity increases to the point that it can justify a larger scale of outlays on the more speculative long-range type of development.

"It may be possible, however, to increase the rate of development expenditures by government in this field over what they would otherwise be through a realization of the importance to our potential aviation strength of accelerating the rate of personal flying development as a national policy.

"Accelerating the rate of development of personal aircraft by increased expenditures of development funds by Army, Navy, or CAA instead of accepting the much slower rate of development which is inevitable if development expenses must be financed through profits on personal aircraft sales, is entirely consistent with our aviation policy in other fields.

Aided Transport Industry—"It is incorrect to say that this type of 'forced development' has no counterpart in other fields of aviation.

"In air transport, while the development of transport aircraft was paid for to a large degree (1933-1941—274D, DC-2, DC-3, DC-4, Boeing 307, Constellation) by the airlines, the funds for so rapid a development would not have been available had the industry not been heavily subsidized through mail pay in the early periods of its development (1926-1938) in addition to the aid given by large free airports and free air navigation facilities.

"Had the airlines not been paid liberally enough to permit them to force the development of transport aircraft more rapidly than would have been possible without subsidization, the airline industry might have taken ten years longer to reach its present stage of development.

"In the development of military and naval aircraft the entire cost of development has necessarily been paid by government which is (except for export) the only customer.

"The personal aircraft (fixed and rotary wing), whose development to the point where it is worthy of wide public acceptance is in many ways as difficult or more difficult a technical problem than the development of transport or military aircraft, has in contrast received a minimum of assistance in the form of government development funds.

"Government expenditures on airports and CPT have been of indirect assistance only as government airport and airways expenditures have been of indirect assistance to air transport.

"The development of large-scale personal flying will admittedly be a long process just as was the development of large-scale air transport. However, if the rate of development of the product is not accelerated by government making available additional development funds, it may take five to ten years longer to obtain a large healthy, self-supporting personal aircraft (fixed and rotary wing) industry. Accelerating that development to this degree thereby justifies increased government expenditures as a part of national policy."

Domestic Scheduled Air Carrier Operations

Operations for February 1947

Source: CAB Form 41

Operator	Revenue miles	Revenue passengers (unduplicated)	Revenue passenger-miles (000)	Express & freight (tons)	Ton-miles flown		Passenger seat-miles (000)	Revenue passenger load factor (%)
					Express	Freight		
American Airlines, Inc.	4,355,742	155,036	80,022	1,661.0	358,750	515,514	135,675	58.98
Braniff Airways, Inc.	815,445	37,844	13,105	175.0	58,344	14,684	23,249	56.37
Chicago & Southern Air Lines, Inc.	535,455	19,559	7,660	138.0	47,172	12,515	14,255	53.74
Colonial Airlines, Inc.	167,050	6,808	1,957	15.0	3,554	0	3,243	60.35
Continental Air Lines, Inc.	357,491	10,891	3,538	32.0	6,527	8,160	7,362	48.06
Delta Air Lines, Inc.	901,280	34,993	16,400	184.0	56,266	39,830	26,016	63.04
Eastern Air Lines, Inc.	3,617,871	123,777	73,367	673.3	310,939	102,862	110,560	66.36
Inland Air Lines, Inc.	139,170	4,613	1,278	8.0	1,692	755	2,632	48.56
Mid-Continent Airlines, Inc.	421,906	16,454	5,108	33.1	9,527	1,452	8,475	60.27
National Airlines, Inc.	704,792	24,067	15,108	102.0	15,019	72,603	22,111	68.33
Northeast Airlines, Inc.	278,057	20,881	3,866	61.0	7,893	756	9,005	42.93
Northwest Airlines, Inc.	1,262,174	36,125	17,213	233.8	121,157	24,511	33,232	51.80
Pennsylvania-Central Airlines Corp.	1,156,553	58,972	14,567	860.0	158,208	110,446	37,544	38.80
Transcontinental & Western Air, Inc.	3,167,633	53,163	39,368	725.0	391,481	280,109	70,993	55.45
United Air Lines, Inc.	4,003,504	107,668	64,491	1,250.0	457,249	575,528	99,236	64.99
Western Air Lines, Inc.	567,916	29,355	10,969	155.7	31,700	31,350	20,949	52.36
Total	22,512,039	740,206	368,017	6,306.9	2,035,478	1,791,075	624,537	58.93

Operations for the First Two Months of 1947 as Compared with the Same Period of 1946

Source: CAB Form 41

Operator	Revenue miles flown January–February		Revenue passengers (unduplicated) January–February		Revenue passenger-miles (000) January–February		Express & freight (tons) January–February	
	1947	1946	1947	1946	1947	1946	1947	1946
American Airlines, Inc.	8,792,697	8,603,735	310,049	253,452	166,379	149,926	3,314.0	1,499.0
Braniff Airways, Inc.	1,650,735	1,586,659	77,482	65,927	27,307	27,096	363.0	192.5
Chicago & Southern Air Lines, Inc.	1,016,975	1,047,743	34,874	41,916	13,757	17,068	268.0	141.8
Colonial Airlines, Inc.	364,552	314,985	14,454	17,791	4,166	5,459	28.5	16.5
Continental Air Lines, Inc.	741,827	656,414	22,856	23,178	7,629	9,039	68.0	21.1
Delta Air Lines, Inc.	1,731,661	1,275,122	65,581	54,756	31,824	21,937	513.0	125.0
Eastern Air Lines, Inc.	6,861,681	5,470,178	230,110	183,364	138,795	97,883	1,275.3	652.0
Inland Air Lines, Inc.	293,958	310,880	11,011	10,404	2,825	2,944	15.8	7.8
Mid-Continent Airlines, Inc.	800,481	679,512	32,810	30,921	9,980	9,482	67.8	41.9
National Airlines, Inc.	1,532,694	1,049,259	48,423	25,772	29,423	13,297	179.1	47.4
Northeast Airlines, Inc.	548,233	434,768	39,790	37,087	7,495	7,739	113.5	27.4
Northwest Airlines, Inc.	2,765,595	2,436,265	75,934	62,648	38,384	40,247	461.4	206.9
Pennsylvania-Central Airlines Corp.	2,324,679	2,231,135	122,076	136,224	30,088	38,798	1,675.0	444.0
Transcontinental & Western Air, Inc.	6,316,647	5,673,114	107,846	98,952	83,213	91,010	1,452.0	1,249.0
United Air Lines, Inc.	8,040,781	7,240,624	210,112	165,335	129,362	105,599	2,373.0	801.4
Western Air Lines, Inc.	1,230,700	1,172,241	61,939	54,903	23,729	20,309	304.9	125.0
Total	45,013,896	40,182,634	1,465,347	1,262,630	744,356	657,833	12,472.3	5,598.7
Index (1946=100)	112.03	100.00	116.06	100.00	113.15	100.00	222.77	100.00

Operator	Ton-miles flown				Passenger seat-miles (000) January–February		Revenue passenger load factor (percent), January–February	
	Express, January–February		Freight, January–February					
	1947	1946	1947	1946	1947	1946	1947	1946
American Airlines, Inc.	755,478	466,859	1,005,229	333,152	272,532	167,924	61.05	89.28
Braniff Airways, Inc.	121,048	70,207	28,034	9,156	46,542	31,962	58.67	84.78
Chicago & Southern Air Lines, Inc.	88,723	52,032	22,694	0	26,060	21,844	52.79	78.14
Colonial Airlines, Inc.	6,794	3,770	0	0	7,100	6,596	58.68	82.76
Continental Air Lines, Inc.	14,128	7,431	16,900	1,010	15,276	13,555	49.94	66.68
Delta Air Lines, Inc.	114,653	59,831	67,030	0	50,839	26,906	62.60	81.53
Eastern Air Lines, Inc.	599,928	409,915	172,807	31,448	211,218	111,079	65.71	88.12
Inland Air Lines, Inc.	3,420	1,773	1,246	0	5,657	4,915	49.94	59.90
Mid-Continent Airlines, Inc.	19,450	15,212	2,734	0	16,099	12,186	61.99	77.81
National Airlines, Inc.	32,893	17,916	116,855	0	43,331	14,859	67.90	89.49
Northeast Airlines, Inc.	15,664	4,858	756	0	17,842	10,237	42.01	75.60
Northwest Airlines, Inc.	237,146	125,329	52,367	0	73,710	47,704	52.07	84.37
Pennsylvania-Central Airlines Corp.	324,086	106,972	200,887	0	75,774	48,210	39.71	80.48
Transcontinental & Western Air, Inc.	821,053	543,854	487,391	164,811	144,439	102,251	57.61	89.01
United Air Lines, Inc.	906,491	676,291	1,066,911	123,862	195,736	123,105	66.09	85.78
Western Air Lines, Inc.	68,936	39,832	56,320	4,371	45,494	25,318	52.16	80.22
Total	4,129,891	2,602,082	3,298,161	667,810	667,810	768,651	59.66	85.58
Index (1946=100)	158.71	100.00	493.88	100.00	162.32	100.00	69.71	100.00

Passenger-miles flown, total revenue and non-revenue (in thousands): January—388,289; February—380,606; Total—768,895.

International Scheduled Air Carrier Operations–1946

Source: Air carriers' monthly reports to CAB on Forms 2380 and 2780

Operator	Revenue miles	Revenue passengers	Revenue passenger-miles	Express & freight (lbs.)	Express & freight ton-miles	Passenger seat-miles	Revenue passenger load factor (%)
American Export Airlines, Inc.	4,268,915	33,324	114,283,722	933,600	1,134,102	140,926,278	81.09
Chicago & Southern Air Lines, Inc. (11/1/46)	73,295	1,307	895,295	22,000	4,151	2,305,710	38.83
Eastern Air Lines, Inc. (9/9/45)	217,333	2,403	2,406,630	4,860	2,427	10,909,378	22.06
National Airlines, Inc. (12/15/46)	18,909	1,316	451,312	0	0	876,230	51.51
Northwest Airlines, Inc. (9/1/46)	337,682	5,058	7,418,370	136,000	98,193	13,036,193	56.91
Pan American Airways, Inc.	44,358,680	854,571	775,467,036	17,029,722	11,381,124	1,130,744,130	68.58
Pan American-Grace Airways, Inc.	5,948,245	104,386	88,968,856	3,037,794	1,467,356	123,531,692	72.02
Transcontinental & Western Air, Inc. (2/5/46)	3,927,743	32,562	108,707,379	498,000	939,874	125,029,001	86.95
Uraba, Medellin & Central Airways, Inc.	222,463	6,200	1,975,566	418,658	64,900	3,962,411	49.86
Total	59,373,265	1,041,127	1,100,574,166	22,080,634	15,092,127	1,551,321,023	70.94

Wet Runway Figures in Crash—Trancontinental & Western Air's Flight 955, en route from Paris, failed to stop on the wet runway, following a landing, and crashed on the southwestern boundary of Washington National Airport March 29, 1946. Although the aircraft was extensively damaged, none of the 12 occupants were injured.

The probable cause of this accident, the Board states, was the poor judgment of the flight crew in attempting to land from a position which did not afford time to accomplish a satisfactory approach.

A contributing factor was the poor landing technique of the pilot in failing to reduce the airspeed sufficiently for a safe landing. A further contributing factor was the crew's lack of knowledge concerning the poor braking action of rubber tires on a wet runway.

The pilot, flying contact under a 700-foot ceiling, had requested permission to use runway 27, the shortest runway on the airport.

The turn for final approach was made closer to the airport than normal, the subsequent descent was steeper than usual, and contact with the wet runway was made at a speed higher than normal. The flaps were still extended during the initial portion of the landing roll and at no time were they beyond the 80 percent position. The aircraft failed to decelerate sufficiently, and overshot the runway.

Inadequate deceleration on wet runways has contributed to several similar accidents during the past five years, the Board stated, indicating that the pilots were not completely aware of the ineffectiveness of rubber tires on wet runways as compared with dry runways.

Engine Fire Causes Accident—The engine fire during a Pennsylvania-Central Airlines' training flight Sept. 12, 1946, was probably caused by the failure of the No. 2 cylinder exhaust valve and No. 1 cylinder exhaust connection in the No. 4 engine, the Board reports.

A contributing factor cited by the Board was the inadequacy of the seal between the firewall and nacelle skin and between individual cowl panels which permitted the fire eventually to reach zone 3 and get out of control.

As a result of additional fire protection regulations adopted by the Board in November 1946, the manufacturer of the type of aircraft involved in the accident is making alterations designed to provide more complete fire protection for engine nacelles.

The micarta sealing in the control cable cut-out in the firewall is being replaced with a stainless steel fire seal. All materials attached to the firewall which are not steel are being replaced by materials of greater heat resistance. Fire detectors are being included in Zones 1 and 3 and additional detection units installed in Zone 2. A steel plate is being attached directly to the forward face of the firewall to cover the junction box opening. Discharge nozzles are being provided in Zone 3, and all lines carrying combustible fluids in Zone 2 are to be steel or of flexible, fire-resistant construction.

With similar modifications proposed for all transport aircraft, air carrier planes will possess a much higher degree of fire resistance than they have had heretofore, the Board stated.

The plane, limited to crew training, was safely landed at the Washington National Airport, although the engine fell from the wing upon contact with the runway.

Attempts to put out the fire in flight were unsuccessful, and the fire continued to burn for two hours after landing, despite the efforts of the Army and airport fire-fighting units.

The Board stated that considerable improvement is needed in both the equipment and the extinguishing agents used on fires of this magnitude.

Altimeter Hooked-up Wrong—An error in altimeter indication which led the pilot to conduct his approach to the airport at a dangerously low altitude is given by the Board as the probable cause of the TWA accident at Shannon, Eire, on Dec. 28, 1946. Nine of the 23 occupants were killed.

Reversal of the primary and alternate static source lines during a maintenance check was responsible for the altimeter error, the Board found.

Negligence of maintenance personnel in certifying to the satisfactory functioning of the static system when they had not made the required tests was a contributing factor. The Board also placed part of the blame on the fogging of the unheated windshield panels which restricted the vision from the cockpit.

Ceiling was reported as 400 feet, and visibility 1 mile. The minimums at night for TWA at Shannon Airport are 500 feet, visibility 2 miles. It is evident, the Board stated, that the pilot chose to check the weather visually. When flying "contact" between the range station and the airport, the pilot believed the ceiling to be considerably higher than reported because of the altimeter error, and decided to land.

The maximum error from all sources in the altimeters in the aircraft under the conditions of the flight was about 300 feet, the Board found. Thus, when the plane descended to 300 feet over the northern border of the airport, the pilot believed the flight to be at 600 feet. After passing over the airport the plane descended to an indicated altitude of 500 feet or the actual altitude of 200 feet above the ground. While turning to the left for final approach to the runway, the aircraft passed behind a low hill which blocked the airport lights from the pilot's vision. During this turn the aircraft lost at least 150 feet altitude and the left wing tip struck the ground.

Ceiling too Low for Landing—Loss of altitude during a turn preparatory to a final approach is given as the probable cause of the United Air Lines' accident at Cheyenne, Wyo., on Oct. 8, 1946, in the Civil Aeronautics Board report. Two of the 43 passengers were killed and the others were injured.

The captain was attempting a third approach under conditions of low ceiling and poor visibility, having been unable to land on either of the first two. On the third attempt, while the plane was in a turn and about 200 feet above the ground, the plane lost altitude and the right wing struck the ground.

The pilot stated, "I made the fatal mistake of not making the turn with my eyes on the instruments."

The weather at Cheyenne at the time was reported as: visibility 5 miles, indefinite ceiling of 400 feet.

Since a 400-foot ceiling was the weather minimum for the airport and was reported "indefinite," the captain was allowed to descend to that altitude. If he had then been able to see the ground, he could have descended another 50 feet, but no lower, during all subsequent maneuvering until the start of his final approach.

During the passes across the field and during the final turn, the captain, by his testimony, was maneuvering at less than the prescribed altitude. He and the first officer also testified that they were unable to maintain contact with the ground while no higher than 300 feet above the runway.

After descending below the minimum altitude and finding that he could not maintain visual contact with the ground, the captain did not follow through with the prescribed missed-approach procedure.

The revision of CAR 61.752, eliminating any qualification of the word "ceiling," has been the immediate result of this and similar accidents. The change was aimed at preventing the practice of "taking a look," the Board stated.

CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board. Both offices are located in the Department of Commerce Building, Washington 25, D. C.

Administration

CAA Appoints Seven New Members of Nonscheduled Group. (March 30)

CAA Okays New Minimums for ILS Approaches. (March 30)

Alaskans Still Fly More than Any Others, CAA Says. (March 31)

High Winds Help CAA Pilots Test Cross Wind Landing Gear. (April 2)

CAA Study Shows Average Airline Pilot. (April 6)

CAA Inaugurates GCA Radar at Washington and Chicago. (April 3)

CAA Begins Use of MEW Radar. (April 3)

Air Travel Committee to Inspect Northern U. S. Airports of Entry. (April 12)

CAA Asks All Pilots to Fly Around Mt. Vernon. (April 14)

Aircraft Radio Operator's Permit Easy to Get. (April 18)

CAA Heads Propose Funds to Develop Personal Aircraft. (April 15)

CAA and Airlines Put Airborne Radar to Work in Alaska. (April 25)

Board

Board Authorizes Service by Belgian Air Carrier. (April 3)

Southern States Case Decision. (April 8)

Foreign Air Carrier Permit Issued to British Commonwealth Pacific Airlines. (April 17)

Domestic Airlines instructed to conduct necessary rescue operations in Texas disaster. (April 17)

ACC Opposes Chosen Instrument Bill. (April 18)

Fire-in-flight Causes Accident—Fire-in-flight and subsequent crash near Concord, Calif., June 26, 1946, resulted fatally to Pilot Dorothy C. Fowler, of Berkeley, Calif., and five passengers, all of Oakland, Calif. They were Mr. and Mrs. William E. Linn and their eight-year-old son, and Mr. and Mrs. Foster Weeks. Mrs. Fowler, a former WASP, was a certificated commercial pilot rated to fly single- and multi-engine aircraft of 0-1500 hp. She had flown about 1200 solo hours.

Mrs. Fowler took off with her passengers from Oakland Airport for a cross-country flight to Reno, Nev. Two minutes later she was cleared to return to the airport where a pin was secured to safety the left wing gas cap cover which had become loose on take-off. After the second take-off the plane was next observed about 20 miles northeast of Oakland and on course to Reno. An observer stated that it was at an altitude of approximately 2000 feet with white smoke trailing behind and that the engine was sputtering. Apparently at this time the pilot turned and headed back toward Concord, located about 8 miles northwest of Clayton. A few minutes later flames were seen coming from the rear of the engine section and extending well back on the outside of the fuselage, and the plane dived to the ground at a high rate of speed. It struck in an open field about one mile northeast of Buchanan Field, Concord.

Damage was so extensive that examination of the wreckage disclosed no reason for malfunctioning of the engine. Fuel and oil lines were completely melted by the fire. None of the occupants wore parachutes. Apparently Mr. Linn and his son either jumped or were thrown clear of the aircraft prior to impact with the ground as their bodies were found approximately one-half mile away from the wreckage.

Airline Orders

E-385 denies request of Pan American Airways to temporarily suspend service at Monrovia, Liberia. (March 20)

E-386 denies petition of the steamship companies, American President Lines, Ltd.; American South African Line, Inc.; Atlantic, Gulf and West Indies Steamship Lines; Grace Line, Inc.; Matson Navigation Company; Moore-McCormack Lines, Inc.; Oceanic Steamship Company; Seas Shipping Company; and United States Lines Company, for an investigation and study of the whole question of the participation by American steamship companies in foreign and overseas air transportation. Grants request for reexamination of Board's interpretation of the pertinent provisions of the Act concerning direct participation of surface carriers in air transportation—issued with an opinion. (March 19)

E-387 fixes Chicago and Southern's temporary rate of mail pay at the base rate of 95 cents per airplane mile for the New Orleans-Havana segment of the carrier's Caribbean route. (March 20)

E-388 dismisses joint application of Northwest Airlines and Philip D. Armour for approval of interlocking relationships. (March 20)

E-389 approves agreement between 16 air carriers for a 10 percent increase in passenger fares extending for 90 days. (March 21)

E-390 orders Pan American to show cause why its certificate should not be corrected to permit stops at Bermuda only when required by weather conditions. (March 21)

E-391 amends expired order 3890 to continue approval of interlocking relationships resulting from positions held by C. W. Jacobs in American Airlines and American Overseas Airlines. (March 21)

E-392 approves agreement between Monarch Air Lines and Western Air Lines relating to rental of a Link trainer. (March 21)

E-393 permits Pan American-Grace Airways to suspend service for 60 days to Ipiales, Colombia. If carrier applies for authority to abandon service between Quito, Ecuador, and Ipiales, Colombia, within this 60-day period, suspension will continue in effect until final disposition of the case. (March 21)

E-394 disapproves resolution of the IATA Middle East Traffic Conference prohibiting stopover privileges on reduced through-fare tickets (Agreement CAB No. 675 R4, Appendix D, Part 1, Par. 23). (March 24)

E-395 consolidates Braniff Airways' routes 9, 15 and 30 into single route 9, subject to the restrictions that flights between Denver and Tulsa shall either stop at Amarillo, or make at least two stops with one of these Oklahoma City, and that flights between Chicago and Houston and between Kansas City and Houston shall stop at Dallas. Chicago and Southern's routes 8 and 53 are also consolidated into single route 8, subject to the restriction that flights between Chicago and Houston shall stop at Memphis—issued with opinion. (March 19)

E-396 permits Northeast Airlines to begin nonstop service between New Bedford-Fall River, Mass., and New York City. (March 26)

E-397 reissues temporary certificate of Summit Airways for feeder route in Wyoming-Colorado area under new name of the carrier, Challenger Airlines Company. (March 21)

E-398 revokes temporary exemption order E-112 permitting Pan American traffic stops at Naples, Italy, and Athens, Greece, on its route from London through southeastern Europe to India; dismisses TWA's petition for reconsideration of order. Pan American now proposes to serve Turkey by a nonstop operation from London, on the basis that it would not be justified in developing Naples and Athens as traffic stops for a limited time. (March 24)

E-399 permits Braniff Airways to intervene in the proceedings concerning the application of Peruvian International Airways for a foreign air carrier permit. (March 25)

E-400 orders Chicago and Southern to show cause why the Board should not fix its temporary rate of mail pay over its domestic system at $1,054,000 from June 1, 1946 through Dec. 31, 1946, and at a rate of 60 cents per ton mile computed on a minimum number of pounds specified for various periods after Jan. 1, 1947. (March 24)

E-401 orders an investigation of the finances, routes and operations of Chicago and Southern Air Lines' domestic system, and directs carrier to submit a special report. (March 24)

E-402 permits Eastern Air Lines to begin nonstop service between Hartford, Conn., and Newark, N. J. (March 26)

E-403 approves agreement between American Airlines and Pan American relating to emergency use of airports. (March 27)

E-404 consolidates applications of Island Airways, Inc., Bremerton Seattle Air Lines, Inc., and Central Aircraft, Inc., for local air carrier service in Washington into one proceeding (docket 2368); grants West Coast Airlines and United Air Lines permission to intervene in the proceeding. (March 28)

E-405 permits the Chamber of Commerce of Pittsburgh, Pa., to intervene in the Middle Atlantic Area Case. (March 28)

E-406 permits Eastern Air Lines to begin nonstop service between Hartford, Conn., and Boston, Mass. (March 31)

E-407 severs the application of Anderson and Gunn (docket 2265) from the Chicago-Seattle Case. (March 31)

E-408 fixes Colonial Airlines' temporary rate of mail pay at 20 cents an airplane mile without reference to base mileage or base poundage for April 15, 1946, to Feb. 28, 1947. Beginning March 1, 1947, the 20-cent rate will be paid on a base poundage of 300 and a base mileage of 12,000, plus an excess poundage rate of .03 cent per airplane mile. (April 1)

E-409 permits American Airlines, Transcontinental and Western Air, Pan American Airways, Mid-Continent Airlines, Northwest Airlines, Minneapolis-St. Paul Metropolitan Airports Commission, and International Air Line Pilots Association to intervene in the United Air Lines and Western Air Lines proceeding relating to agreement of the two carriers for transfer of certificate and sale of certain property—docket 2839. (April 1)

E-410 denies petition of Mid-Continent for a proceeding to determine if portion of Inland's route 35 east of Huron, S. Dak., should be suspended. (April 1)

E-411 allows American to continue cargo flights between San Antonio, Monterrey and Mexico City until further order. (April 1)

E-412 severs application of Chicago and Southern (docket 2684) for service in the Caribbean area from the applications of Caribbean-Atlantic and Pan American—dockets 2246 and 2170 respectively. (April 2)

E-413 orders Pan American to show cause why Board should not set its temporary mail pay for Alaskan operations at $1,500,000 for 1946; and beginning Jan. 1, 1947, at the base rate of 59 cents an airplane mile. (April 1)

E-414 orders Pan American to show cause why the Board should not fix its temporary mail pay for its trans-Pacific routes at $6,800,000 for the period from Nov. 16, 1945 to Dec. 31, 1946; and at the base rate of $1.20 an airplane mile on designated average mileage for each of 23 segments. (April 1)

E-415, E-416, E-417 and E-418 approve agreements between Pan American and Northeast; Pan American and Braniff; Pan American, American Airlines and American Overseas; and Pan American and Mid-Continent, each relating to interline ticketing. (April 3)

E-419 orders a hearing on the joint application of A. Felix du Pont, Jr., and All American Aviation for the approval of interlocking relationships arising from Mr. du Pont's positions as a director of All American and of Piasecki Helicopter Corp. (April 3)

E-420 approves agreement between eight overseas carriers and the government of Newfoundland relating to the operation of airport facilities at Gander, Newfoundland. (April 3)

E-421 grants a foreign air carrier permit to La Societe Anonyme Belge D'Exploitation de La Navigation Aerienne (SABENA) authorizing foreign air transportation of persons, property and mail between the terminal point Brussels, Belgium, the intermediate points Shannon, Eire, and Gander, Newfoundland, and the terminal point New York City—issued with opinion. (March 20)

E-422 permits Pan American to serve Suva, Fiji Islands, through use of Nandi Airport. (April 3)

E-423 permits the Independent Airfreight Association, Inc., Air Freight Forwarder Association, and Cincinnati, Ohio, to intervene in the Freight Forwarder Case. (April 3)

E-424 dismisses application of Airfreight Forwarders Co. in the Freight Forwarders Case. (April 3)

E-425 dismisses applications of Air World Service, Inc., in the Freight Forwarder Case at applicant's request. (April 3)

E-426 permits Linea Aeropostal Venezolana to serve New York City through use of LaGuardia Airport. (April 4)

E-427 permits the Chamber of Commerce of Portland, Oreg., to intervene in the Pacific Northwest-Hawaii Service Case. (April 4)

E-428 approves agreement between Alaska Airlines and American relating to use of hangar at Elmendorf Field, Anchorage, Alaska. (April 4)

E-429 approves interlocking relationships of Noah Dietrich as a director of TWA and a director and officer of Hughes Tool Co. (April 4)

E-430 corrects Pan American's certificate for trans-Atlantic service via the Azores by designating that it may stop at Bermuda only when weather conditions require—issued with supplemental opinion. (March 27)

E-431 approves agreements between Delta Air Lines and 19 companies relating to pickup and delivery service within terminal areas. (April 7)

E-432 permits Eastern to intervene in docket 2786—petition of Postmaster General—for fixing compensation for transportation of mail over international routes. (April 7)

E-433 redesignates the intermediate points, Raleigh and Greensboro, N. C., and Beaumont, Tex., on Eastern's routes as Raleigh-Durham, Greensboro-High Point and Beaumont-Port Arthur. (April 4)

E-434 denies petition of Delta for deferment of decision on certain issues in the Southeastern States Case. (April 4)

E-435 grants Piedmont Aviation, Inc., and Southern Airways, Inc., temporary 3-year certificates for local feeder service in the Southeastern States area, and amends the certificates of American, Delta, Eastern, PCA and TWA—issued with opinion. (April 4)

E-436 fixes PCA's temporary mail pay at $385,000 for period from Jan. 14, 1947 through Feb. 28, 1947, and after that at 60 cents a ton mile based on a daily average of 45,000 miles and minimum poundage designated for various periods. (April 7)

E-437 orders an investigation of PCA's operations and directs carrier to file a special report. (April 7)

E-438 grants a foreign air carrier permit to British Commonwealth Pacific Airlines (BCPA) for air transportation between New Zealand and Vancouver, B. C., via Fiji Islands, Canton Island, Honolulu and San Francisco. (March 21)

E-439 dismisses application of Interstate Commercial Flyers for route in California area on request of applicant. (April 8)

E-440 opens to the public, documents in the proceeding and the Board's opinion of July 17, 1944, fixing rate of mail pay for Pan American's trans-Atlantic service, previously withheld for security reasons. (April 8)

E-441 fixes Caribbean-Atlantic Airlines' mail pay for period from Feb. 1, 1946 through Sept. 30, 1946, at $74,038. (April 9)

E-442 permits Challenger Airlines Co. to serve Salt Lake City, Utah, Kemmerer, Rock Springs, Rawlins, Laramie and Cheyenne, Wyo., and Denver, Colo., on route 74, beginning April 15. (April 10)

E-443 dismisses application of Southwest Airways Co. for authority to change service pattern on route 76 because Board order E-160 permits this change. (April 10)

E-444 permits the Chamber of Commerce of Honolulu, Hawaii, leave to intervene in the Pacific Northwest-Hawaii Service Case—Docket 2537 et al. (April 10)

E-445 dismisses application of Air Pick-Up Lines, Inc., Docket 2499. (April 10)

E-446 approves interlocking relationships of Charles S. Cheston as Director of American Airlines and of Kansas, Oklahoma & Gulf Railway Co. (April 10)

E-447 exempts Pan American Airways, for the period from April 11 to and including April 30, 1947, from the provisions of section 401(a) of the Act, insofar as they would prevent Pan Am from serving Bermuda on a full traffic stop basis on two weekly round trip flights between Boston, Mass., and Bermuda and one weekly round trip flight between Washington, D. C., and Bermuda. (April 11)

E-448 makes order No. E-441 immediately effective. This order fixed the lump sum of $74,038 as the mail rate for Caribbean-Atlantic Airlines for the period Feb. 1, 1946 to and including Sept. 30, 1946. (April 11)

E-449 dismisses application of Plantation Air Lines, Docket 2108. (April 11)

E-450 permits the Postmaster General leave to intervene in the Additional Service to Florida Case—Docket 1668 et al. (April 11)

E-451 approves agreement between TWA and American and Eastern Air Lines relating to the sharing of all expenses of maintaining a hangar. (April 14)

E-452 approves agreements between American and Western Air Lines and Consolidated Vultee Aircraft Corp. and between American Airlines and Western Air Lines, relating to lease of space in the administration building, Lindberg Fld., San Diego. (April 14)

E-453 approves agreements between American Airlines and Braniff Airways and between American Airlines and Aerovias Braniff S. A., relating to agency sales commissions. (April 14)

E-454 permits Pan American Airways to intervene in the application of TACA, S. A., for amendment of its foreign air carrier permit. (April 14)

E-455 orders that the intervention of Plantation Air Lines in the application of National Airlines, which was permitted by order No. E-93, be dismissed. (April 15)

E-456 orders that amended Agreement CAB No. 698 between certain air carriers (relating to the establishment of a consolidated air freight tariff and authorizing discussions of rates and related matters) be approved, subject to the conditions of order No. E-339, for a temporary period not extending beyond the date of the final order in this proceeding. (April 15)

E-457 approves agreement, between certain carriers, subject to certain conditions, concerning resolutions of the 4th Meeting of the North Atlantic Traffic Conference of the International Air Transport Assn., relating to rates. (April 8)

E-458 grants Continental Air Lines leave to intervene in and become a party to the proceeding concerning the application of Western and United Air Lines for an order approving an agreement for the sale of certain properties and the transfer and amendment of a certificate; denies Continental's request for reconsideration of its application and reopening of the record in the proceeding—Docket 519 et al. (April 17)

E-459 approves an agreement between American Airlines and Braniff Airways relating to use of the public address system at Oklahoma City. (April 17)

E-460 approves an agreement between American and Continental Air Lines relating to use of the public address system at Oklahoma City. (April 17)

E-461 dismisses application of TACA, S. A., for a temporary exemption order from the provisions of Title IV of the Act and from the terms of its foreign permits, insofar as they would prohibit TACA from serving Belize and Guatemala City on its operation between Miami, Havana, and San Salvador. The Board found it is without jurisdiction to grant an exemption to a foreign carrier. (April 17)

E-462 permits The Puerto Rico Transportation Authority to intervene in the applications of Caribbean-Atlantic, Pan American, and Chicago and Southern Air Lines for certificates or amendments to certificates. (April 18)

E-463 denies petition of Transcontinental & Western Air for rehearing, reargument and reconsideration of the final order in the proceeding concerning the applications of Western, United, TWA and Continental Air Lines for certificates and also TWA's application for leave to file the petition. (April 18)

E-464 dismisses application of Island Airways—Docket 2368. (April 21)

E-465 dismisses the proceeding concerning the non-certificated operations of Trans-Tropic Airlines. The line has discontinued all operations in air transportation and the corporation was dissolved on November 6, 1946. (April 21)

E-466 orders Willis Air Service to cease and desist from engaging in transportation of persons and of persons and property on the same flights unless and until there is in force a certificate issued by the Board and an air carrier operating certificate issued by the Administrator authorizing it to engage in scheduled transportation of persons. (April 22)

Airman Orders

S-64 affirms examiner's order revoking student certificate of Patrick Lemeul O'Timmons. (March 25)

S-65 affirms examiner's order for a six month's suspension of Robert Burford Ballard's certificate. (April 3)

S-66 assigns for oral argument, proceeding against LeRoy Nelson Smith, holder of airline transport certificate. (April 3)

S-67 assigns for oral argument, proceeding involving Gerold William Reier, holder of commercial pilot certificate. (April 3)

S-68 suspends certificate of Richard E. Fennelly for six months instead of the 60 days previously ordered. The CAA appealed on the ground that the 60-day suspension was inadequate for the number and seriousness of the violations. (April 3)

S-69 denies request of L. F. Foster, Jr., for a waiver of 29.10 to permit him to hold a first class medical certificate. (April 4)

S-70 modifies findings in the case of Lonnie Joe Edwards, student pilot, but denies request for a reduction of the penalty. (April 3)

S-71 affirms examiner's order revoking the student certificate of William E. Hall. (April 9)

S-72 denies petition of Joe W. Pittman for reconsideration of order SD-205, suspending his commercial certificate for six months. (April 15)

S-73 affirms initial decision revoking commercial certificate of Benjamin Jankowski, after considering written exceptions filed by the defendant. (April 17)

SD-190 suspends for 45 days, student certificate of Harry James Leeper. He carried a passenger from San Marcos Airport, Calif., to Fullerton, Calif., and partial return, in furtherance of a business. On return flight he operated the aircraft carelessly. (March 3)

SD-191 revokes student certificate of Harry Jackson Thurston, Jr. While on a flight from Douglas, Ga., to Pearson, Ga., he carried a passenger—43.50; flew outside a local flying area without 10 hours solo and without his instructor's permission—43.52; flew at treetop level over Pearson—60.105; executed steep turns at treetop level, struck a tree and crashed, thus flying carelessly and recklessly—60.101. (March 11)

SD-192 suspends for six months, private certificate of Robert Duane Piper. He flew at less than 400 feet altitude over Emmetsburg, Iowa, and executed several shallow dives in the vicinity of his parents' home—60.105(a); flew the plane aerobatically over a congested area—60.104(b); operated aircraft carelessly and recklessly—60.101. (March 11)

SD-193 suspends for six months private certificate of Marvin R. Jackson. He flew at less than 1000 feet over Grand Junction, Colo., and the golf course—60.105(a); flew low over the municipal airport and did not observe other traffic, did not take precautions to avoid collision with other aircraft, and did not conform to the flow of traffic—60.106(a); did not follow the local traffic rules in making left-hand turns around the airport—60.106(b), and flew in a careless, reckless manner. (March 11)

SD-194 revokes student certificate of Andrew James Stokes for low, aerobatic flying over the C. K. McClatchy High School and the Christian Brothers School at Sacramento, Calif. He performed a number of aerobatic maneuvers, consisting of dives at less than 100 feet over the athletic fields of the schools while a large number of persons were on the fields, and the area

immediately adjacent was a congested residential and business district—60.104(b). (March 20)

SD-195 revokes commercial certificate of Robert L. Oliver. He flew aerobatically over Weston, Mo., performing rolls and inverted flight—60.104(b); and flew at less than 500 feet above the ground over Weston, violating 60.105(a) and (b) and 60.101. (March 10)

SD-196 suspends for three months, student certificate of John Phillips Zerega for careless, reckless flying on a flight originating from the Barrett Airport, Skytop, Pa. (Feb. 21)

SD-197 suspends commercial certificate of Roy James Carver for 60 days from Jan. 29, 1947, in a decision following rehearing of the case. (Jan. 29)

SD-198 suspends for 60 days, airman certificate of Robert Lynwood Logue. While a student pilot he flew at approximately 100 feet over the University of Houston, Houston, Tex. Since that violation, Logue has received his private certificate and is training for a commercial certificate. (March 13)

SD-199 suspends for 90 days, commercial certificate of Charles E. Crecelius. He flew over Pacific College, Newberg, Oreg., at less than 500 feet, executing chandelles on the pull-ups, violating 60.104(b) and 60.105(a); circled the airport at that city in a direction opposite to the traffic pattern formed by aircraft landing and taking off—60.106(c); and while circling flew to within approximately 50 feet of another aircraft without prearrangement with the other pilot—60.103(d). (March 15)

SD-200 suspends for six months, commercial certificate of Gardiner Rogers for flying at less than 1000 feet over Lower Merion Station, Pa.—60.105(a); and piloting an aircraft when he did not have in his possession a medical certificate—43.402. (March 15)

SD-201 suspends for six months student certificate of Harry Felix Knock for careless, reckless flying. While piloting a plane over Redwood City, Calif., he performed figure eights consisting of low glides, climbs and turns at altitudes of between 75 and 200 feet—60.105(a). (March 15)

SD-202 suspends for six months, commercial certificate of Donald Howard Beers, part-time flight instructor. Accompanied by student pilots, he flew an aircraft on two different days at or about treetop level over boats at Back Bay Beach, Md., and at low altitudes over houses, barely missing telephone wires. He also performed aerobatics in the area—60.104(b). (March 7)

SD-203 suspends for 60 days, commercial certificate of William Alexander Dick-Peddie for low flying over Drake University, Des Moines, Iowa. (March 15)

SD-204 suspends for 90 days, commercial certificate of John Francis Kimmel for attempting to take off from Hale Field, Missoula, Mont., in a plane overloaded by about 110 pounds—43.1010. As result of overloading, the plane could not be maintained in an air-borne condition and crashed about three-fourths of a mile north of the field. (March 15)

SD-205 suspends for six months, commercial certificate of Joe W. Pittman for careless, reckless operation. He made a night flight from Rocky Mount, N. C., in an aircraft not equipped with forward and rear position lights—43.30(b) (2) and 60.108(a). On return to airport, he piloted aircraft into an automobile, injuring the driver and damaging the plane and automobile. (Feb. 27)

SD-206 suspends for 30 days, airman certificate of Oscar Meyer, holder of commercial certificate with flight instructor rating, and mechanic certificate with A and E ratings. He authorized flight of a plane he owned when it did not have aboard a registration certificate—43.100; and did not have an effective airworthiness certificate or special authorization—43.101. (Feb. 24)

SD-207 revokes student certificate of Vincent Leo Kreyer, Jr., for low flying over East Rochester, N. Y.—60.105(a); and for piloting plane outside local flying area when he did not have 10 solo hours, had not passed the written examination and did not have his instructor's endorsement—43.52(a) (b) and (c). Since Kreyer surrendered his certificate June 21, 1946, he may be issued a certificate this June 21. (March 13)

SD-208 suspends for six months, airman certificate of Marvin Leslie Taylor for careless, reckless flight over Mount Washington, Cincinnati, Ohio. He broke the altitude rule and performed aerobatics over the area. (March 6)

SD-209 suspends for six months, commercial certificate of Evald Leo Lofgren beginning Nov. 18, 1946, the date the pilot surrendered his certificate. Lofgren flew at less than 1000 feet over Kansas City and piloted the aircraft carelessly and recklessly. (March 21)

SD-210 suspends for 90 days the private certificate of Joseph Anthony Knapp for flying aerobatically in the vicinity of Brunswick Township, N. J., while carrying a passenger when neither pilot nor occupant had parachutes—43.409. (March 19)

SD-211 suspends for 30 days, A and E mechanic certificate of Jerry Garbell for certifying that major repairs to an aircraft were made under his supervision when they were not, and he had no personal knowledge as to whether the repairs were performed in a workmanlike manner as required by CAR 18.6 and 609 of the Act. (March 18)

SD-212 suspends for six months, commercial certificate of Phillip Bruce Funk for flying at 100 to 150 feet over a residential area of Sioux City, Iowa—60.105(a); performing aerobatics on the flight—60.104(b); and careless, reckless operation. (March 18)

SD-213 suspends for 90 days the commercial certificate of George H. Densten, Jr., for flying at less than 1000 feet over the Borough of National Park, N. J.—60.105(a); diving to approximately tree-top altitude over the area—60.104(b); failing to have an appropriate medical certificate—43.402(b); and operating in careless, reckless manner. (March 18)

SD-214 revokes commercial certificate of Gerald Robert Duitsman. He flew aerobatically over the crowded main street of Reinbeck, Iowa—60.104(b); made passes over the street to an altitude of below 800 feet—60.105(a); carried passengers in aerobatic flight without parachutes—43.409; piloted a single-engine land plane when he was rated to pilot multi-engined seaplanes only—43.63; and operated carelessly and recklessly—60.101. (March 27)

SD-215 suspends for six months, commercial certificate of Edward D. Woycik for flying at less than 500 feet over a sailboat in Cold Spring Harbor, L. I.—60.105(b); diving and zooming at boat; and flying at an altitude of about 50 feet above a pier and public bathing beach at Bayville, L. I., thus operating an aircraft recklessly and carelessly. (March 18)

SD-216 suspends for three months, private certificate of Roderick John Poytress for low flying during which he struck a telephone line near Fresno, Calif. (March 18)

SD-217 suspends for six months, commercial certificate of William Martin McGovern. While carrying his sister as a passenger, he flew at less than 1000 feet over Chicago, Ill.—60.105(a); and performed aerobatics when neither had parachutes—60.104(b) and 43.409. (March 21)

SD-218 suspends for 60 days, private certificate of Frank Wilson Pfost. He repaired an aircraft when he did not have mechanic certificate—18.50 and flew the aircraft from Riggins to Boise, Idaho, when it was unairworthy—43.20. Extenuating circumstances called for a moderate penalty, the examiner indicated. (Feb. 19)

SD-219 dismisses complaint against student certificate held by Fred Burch for lack of evidence that he flew at less than 500 feet in area where lower flight would endanger persons or property on the ground. (Feb. 21)

SD-220 suspends for 60 days the commercial certificate of Donald Earl McCombs for low flying over Overland, Mo., and careless, reckless operation. (March 10)

SD-221 revokes the student certificate of David Carter for careless, reckless flight. On two different flights he performed aerobatics to within 500 and 400 feet over North Sacramento, Calif., and flew low over the area. (March 25)

SD-222 revokes student certificate of Vernon L. Strang for flying over a congested area of Wanwatosa, Wis., at altitudes varying between 100 and 500 feet—in violation of 60.105(a) and 60.101. (March 26)

SD-223 revokes student certificate of John E. Frostbutter for carrying a passenger from Clinton, Md., to Groom, Md.—43.50. (March 26)

SD-224 suspends for six months, student certificate of David Mooers. Examiner found that he flew outside a local practice area when he did not have 10 hours solo—43.52(a); had not passed the written test—43.52(b); and his certificate had not been endorsed by his instructor—43.52(c). He also flew at less than 1000 feet over a congested area near Old Orchard Beach, Maine. (March 28)

Air Regulations . . . *on May 1, 1947*

Title	No.	Part: Price	Part: Date	Part: No. of Amendments	Manual: Price	Manual: Date	Manual: No. of Amendments
Aircraft							
Airworthiness Certificates	01	$0.05	10/15/42	2	None	None	
Type and Production Certificates	02	.05	7/1/46	1	$0.10	8/1/46	
Airplane Airworthiness—Normal, Utility, Acrobatic, and Restricted Purpose Categories	03[1]	.25	12/15/46	2	None	None	
Airplane Airworthiness	04a	.15	11/1/43	7	.45	7/1/44	2
Airplane Airworthiness Transport Categoreis	04b[1]	Free	11/9/45	4	None	None	
Rotorcraft Airworthiness	06	.10	5/24/46		None	None	
Aircraft Airworthiness, Limited Category	09	.05	11/21/46		None	None	
Engine Airworthiness	13	.05	8/1/41		None	None	
Propeller Airworthiness	14	.05	7/15/42	1	.15	5/1/46	
Equipment Airworthiness	15	.05	5/31/46		No stock	7/1/38	
Radio Equipment Airworthiness	16	.05	2/13/41		Free	2/13/41	1
Maintenance, Repair, and Alteration of Aircraft, Engines, Propellers, Instruments	18	.05	9/1/42		.50	6/1/43	
Airmen							
Pilot Certificates	20	.05	7/1/45	5	None	None	
Airline Pilot Rating	21	.05	10/1/42	3	None	None	
Lighter-than-air Pilot Certificates	22	.05	10/15/42	2	None	None	
Mechanic Certificates	24	.05	7/1/43	1[2]	None	None	
Parachute Technician Certificates	25	.05	12/15/43	3	None	None	
Traffic Control Tower Operator Certificates	26	.05	10/10/45	1	None	None	
Aircraft Dispatcher Certificates	27	.05	7/1/46		None	None	
Physical Standards for Airmen	29	.05	1/10/46		None	None	
Flight Radio Operator Certificates	33	Free	4/29/47		None	None	
Flight Navigator Certificates	34	Free	4/29/47		None	None	
Flight Engineer Certificates	35	.05	3/15/47	1	None	None	
Operation Rules							
Air Carrier Operating Certification	40	.10	7/10/46	[3]	None	None	
Scheduled Air Carrier Operations Outside Continental U. S.	41	.05	5/1/46	6[1]	None	None	
Nonscheduled Air Carrier Certification and Operation Rules	42	.05	8/1/46	5[4]	.15	11/1/46	
General Operation Rules	43	.05	7/1/45	8[5]	None	None	
Foreign Air Carrier Regulations	44	.05	7/1/45	1	None	None	
Transportation of Explosives and other Dangerous Articles	49	.05	7/1/45		None	None	
Air Agencies							
Airman Agency Certificates	50	.05	4/30/46		.15	5/15/46	1
Ground Instructor Rating	51	.05	12/15/43	1	None	None	
Repair Station Rating	52	.05	10/1/42		Free	2/41	
Mechanic School Rating	53	.05	8/1/42	1	Free	5/40	
Parachute Loft Certificates and Ratings	54	.05	1/21/43		None	None	
Air Navigation							
Air Traffic Rules	60	.05	8/1/45	2[3]	.15	10/45	
Scheduled Air Carrier Rules	61	.10	8/1/46	5[6]	None	None	
Miscellaneous							
Rules of Practice Governing Suspension and Revocation Proceedings	97	Free	1/1/47	1	None	None	
Definitions	98	.05	10/15/42		None	None	
Mode of Citation	99	Free	11/15/40		None	None	
Regulations of the Administrator							
Aircraft Registration Certificates	501	Free	3/31/43		None	None	
Dealers Registration Certificates	502	Free	11/15/46		None	None	
Recordation of Aircraft Ownership	503	Free	3/31/43		None	None	
Notice of Construction or Alteration of Structures on or near Civil Airways	525	Free	7/23/43		None	None	
Seizure of Aircraft	531	Free	12/8/41		None	None	
Reproduction and Dissemination of Current Examination Materials	532	Free	1/15/43		None	None	
Federal Aid to Public Agencies for Development of Public Airports	550	Free	1/9/47		None	None	
Acquisition by Public Agencies for Public Airport Purposes of Land Owned or Controlled by the United States	555	Free	1/9/47		None	None	
Claims for Reimbursement for Rehabilitation or Repair of Public Airports Damaged by Federal Agencies	560	Free	1/9/47		None	None	

[1] Certain aircraft may comply with the provisions of this part or Part 04a. [2] Special regulations 340, 340A and 340B. [3] Special regulations 361A, 361B. [4] Special Regulation 385. [5] 43-1, 43-3, 43-5 are obsolete. [6] Special regulations 361A, 361B, 385.

Note: Those parts and manuals for which there is a price are obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Currency is sent at sender's risk. Amendments and free Parts are obtained from the Publications Section, Civil Aeronautics Board, Washington 25, D. C.; free Manuals and Regulations of the Administrator from the CAA Office of Aviation Information, Dept. of Commerce, Washington 25, D. C.

CAA Advises Pilots On Trip to Alaska Over Inside Route

In anticipation of the increased private flying to Alaska this summer resulting from the awakened interest of the Territory as a vacation land, T. P. Wright, Administrator of Civil Aeronautics, has issued detailed advice and instructions for the guidance of private pilots using the inside route.

Great Falls to Fairbanks—These instructions, formulated by Virgil E. Stone, CAA Personal Flying Development Expert in Alaska, facilitate preparation for any flight along the route from Great Falls to Fairbanks. In general, the route suggested is along the Alcan Highway.

"This advice comes from experienced pilots," Mr. Wright said. "We have taken into account some discouraging and dangerous experiences which several pilots have had along this route. We know how expensive and disheartening it is to search for lost pilots in that area, and we hope this advice will be helpful and be heeded.

Worth the Trip—"Few long flights on this continent compare with that to Alaska and the flights that can be made within the Territory. I can testify to the amazing beauty and high interest that every flight up there holds for all pilots. Alaska is certain to become more and more popular with our private pilots who want to tour."

The guide is on a single sheet, and copies are available at CAA offices in Anchorage, Washington, Seattle, Minneapolis, Great Falls, Yakima, Portland, Spokane, Helena and Billings.

Following are the detailed instructions contained in the guide, "Flying the Inside Route to Alaska." Included are the approximate mileages between the places where landings will be made on the flight.

Flight Itinerary—At Great Falls, Montana, clear your flight with U. S. Customs. Then file your flight plan to Lethbridge, Canada (165 miles). Check with Canadian Customs at Lethbridge.

The next flight plan should be made to Edmonton, another 285 miles. At Edmonton you should again check with customs and clear with the Royal Canadian Air Force with respect to rations and equipment needed before departure. This equipment will include such items as sleeping bag, flashlights, pocket compass, axe, matches in waterproof container, insect lotion, rifle with ammunition and fishing tackle.

After the RCAF gives you clearance on the above and with the necessary weather clearance, proceed to Grande Prairie, distance 240 miles.

The itinerary from there is: Grande Prairie to Ft. St. John (100 miles); Ft. St. John to Ft. Nelson (190 miles); Ft. Nelson to Watson Lake (235 miles); Watson Lake to Whitehorse (215 miles); Whitehorse to Northway, Alaska (270 miles); Northway to Fairbanks (225 miles).

Flight Charts 13, 14, and 15 will guide you from Great Falls, Montana, to Fairbanks, Alaska.

It is quite possible you will be advised to follow the Alaskan Highway along a greater portion of the route in which case your flight will be extended somewhat but in no instance should it exceed 325 miles. Also, you might be permitted to pass over some of the shorter hops if your gasoline allowance is sufficient. However, make certain where you are told to land next and see that you do.

At Whitehorse, your last stop in Canadian Territory, you will again clear the Canadian Customs. Your U. S. Customs clearance will be at Fairbanks. Actually, your gasoline supply may not permit you to travel from Whitehorse to Fairbanks, a distance of almost 500 miles and it may be necessary for you to stop at Northway for refueling. Make certain all concerned are properly advised.

Fuel and accommodations for eating and sleeping are available at all stations in Canada. At the Northway, Alaska station fuel is presently available from surplus Army stocks but the responsibility for proper "Shammying" of gasoline rests with the traveler. At present this service is rendered only as a courtesy to the transient pilot, in emergency.

Your trip should be planned, if possible, so you will not have to call the Customs officers before 8:00 a. m. or after 5:00 p. m. or on Saturdays or Sundays, else an extra charge may be made.

CAA Exhibit Aids High School Aviation Class

Charles E. Planck, CAA Office of Aviation Information, explains the CAA instrument landing system to a group of aviation students. On the left is Mrs. Pearl Robinson, aviation teacher in District of Columbia high schools.

Thirty Washington high school students know more about the problems of air navigation after a short, illustrated course in the subject at the exhibit of the Civil Aeronautics Administration in the lobby of the Commerce Department building.

The exhibit, on public display in the lobby, utilizes moving and lighted models. It shows operation of the CAA instrument landing system, the ground controlled approach radar equipment for landing, the use of radar in the control of air traffic, and the shift of CAA airways communications and signals from low to very high frequency.

Led by Mrs. Pearl Robinson, aviation teacher in the Washington high schools, the students observed the models and then visited the CAA's laboratory of teaching materials. There they viewed various models of planes, navigating devices, model wind tunnels, and other instructional aids.

ACC Unanimously Opposed To "Chosen Instrument" Bill

Unanimous agreement on recommendation to the Senate Committee on Interstate and Foreign Commerce, against enactment of the "chosen instrument" bill (S.987) recently was announced by the Air Coordinating Committee.

The ACC, which is the President's interdepartmental committee on aviation policy, advocated continuation of the existing policy of regulated and limited competition between U. S. air carriers operating abroad. It agreed to state its position in this respect in a letter to the chairman of the Senate Committee.

The ACC is composed of representatives from the State, War, Navy, Commerce and Post Office Departments and the Civil Aeronautics Board.

Average Airline Pilot Is 32 And Has Logged 4859 Hours

The average airline pilot and co-pilot in the United States is 32 years old, and has been piloting planes 4859 hours.

This is a part of the picture of the average airline pilot, produced by a Civil Aeronautics Administration study looking toward possible reduction of the human element of error in air accidents.

The study was made from the records of all airline pilots who received airline transport pilot medical certificates in 1946, and reveals the physical characteristics of this important group of men.

The program of the CAA's Aviation Medical Service for the redetermination of physical standards for airmen will take into consideration the physiological effects of extended occupation as an airline pilot and the possibilities of increasing air safety through the use of pilot selection methods other than those of proficiency determination.

This average pilot and co-pilot weighs 165 pounds and is five feet ten inches tall. There are fewer than three chances in 100 that he wears glasses, only 2.7 percent requiring a lens correction. These figures were taken only from records of men who have been active enough in airline flying to have piled up at least 150 hours of flying in the last six months.

☆ U. S. GOVERNMENT PRINTING OFFICE, 1947

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